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COPROLOGY IN VETERINARY MEDICINE.—Since about fifteen years numerous researches have been made from the scientific as well as from the clinical point of view, of the chemical composition of feces and on their bacteriology; and the results which have been obtained have helped to solve many obscure phenomena relating to assimilation in the normal state and in diseases. Coprology has then, to the same extent as urology, become a mode of clinical investigation by which valuable indications have been obtained, not only for the diagnosis, but also the prognosis and treatment of some diseases.

In veterinary medicine, the analysis of urine is part of the daily investigations of the veterinarian; by opposition the chemical examination of feces has never been carried out in a systematic manner. The veterinary practitioner, most ordinarily stops with the observation of the form of the anal droppings, their consistency, their color or their nature. And yet the problem of the general nutritive function is of as great importance in animals as it is in man. But it is so difficult in our practice, in the clinical sense of the word, that its consideration is almost impossible.

It is, however, with this object in view that a veterinarian, Dr. Cozette, has thought proper to work up the question and examine what practical application, at least, could be obtained. In a communication before the Société de Pathologie Comparée he has brought the question of the "Importance of the Biliary Function from the Point of View of the Diagnosis and of the Prognosis of Diseases in Domestic Animals"; in which he first passed a review of the biliary secretion and where he points out the importance that belongs to the study of the presence of stercobiline in the pathological condition of an animal. He examines the troubles of the biliary function which may be modified in quantitative as well as qualitative conditions and tells of the method by which stercobiline and biliary pigments can be looked for in fecal matters.

The simplest way being to dilute approximately 1 c. c. of the matter in 15 to 20 c. c. of distilled water, to stir the mixture well to make it thorough and then to add from 8 to 10 drops of acetic sublimate. Stir it again and put the tube at rest. From half to one hour after a very noticeable reaction will be obtained, viz. a variable coloration most significant and which will give immediately valuable information, not only upon the biliary function itself, but also upon the intestinal function of the subject under examination. For instance, a tube with white greyish precipitate and a colorless liquid indicates acholy; one with yellow or yellow-greenish contents indicates the presence of biliverdine, and tubes with green coloration means bilirubine. One with yellow-reddish indicates stercobilinogene and tubes with rosy coloration varying between the rosy-purplish and the deep red reveals stercobiline.

These researches and the results thus recorded by Dr. Cozette are the confirmation of facts entirely similar in human pathology. In physiology and in pathology, the bile plays a part which could be fully appreciated by taking into consideration the so remarkable development of the hepatic gland in the animal series. If there is no physiological biliary secretion, no proper nutrition, no assimilation can take place. With an acute disease, with no se-

cretion of bile or with diseased bile, the vitality of the individual is lost or compromised in various degrees, if in presence with an infectious disease or of its microbial or toxic effects.

Dr. Cozette has completed his researches by a series of experiments upon dogs, pigs and calves. With the two first class of animals he has followed the biliary function in both ways from the normal function to the acholy and vice versa and he has found that the presence of stercobilin and even of biliverdine in the feces were always a favorable sign for a good prognosis. His observations, covering cases of gastro-duodenitis, acute gastro-enteritis, dysenteric enteritis, jaundice, infectious pneumo-enteritis of swine, simple diarrhoea of calves, acute enteritis of ruminants, etc., have given him facts which have permitted his conclusions, viz.: In young animals affected with intestinal diseases the systematic examination of feces by the reaction of the acetic sublimate permits to bring in evidence the value of an important element of vital defence, viz., the biliary secretion.

If this is absent, that is if in the test tube there is a white greyish or white greenish deposit with a colorless fluid, the prognosis will be fatal.

If on the contrary the biliary secretion is still going on and if especially the reaction of stercobilin (rosy, red or purplish) the prognosis will be favorable.

However, perfect as this method appears to be, one must not forget that it is but an accessory means for establishing a prognosis, and that its value remains more or less under the subordination of the minutious examination of the diseased animal. The acetic sublimate reaction can only be of great importance to the practitioner, but it might be dangerous to conclude too hastily to a favorable prognosis, as all diseased subject may still have a normal biliary function and yet die with other physiological disturbance.

At any rate, coprology applied to veterinary medicine may later on prove as interesting as it does in human medicine.



FISTULAS AND THEIR TREATMENT.—A very remarkable case of these ailments has given opportunity to Prof. Hendrick to write an interesting article in the *Annales de Bruxelles*. As the learned professor says: "If we consider the pathogeny of fistulas, we observe that those accidents are generally, if not due, at least kept up by one of the following conditions: Most often at the bottom of the fistulous tracts there is found a small piece of mortified tissue, acting as an infected foreign body and promoting suppurative phenomena in the structures where it remains. Whether it is a small splinter of bone, one of tendinous, ligamentous, cartilaginous or connective tissue, the condition remains the same, viz.: the suppuration continues until by a favorable circumstance the elimination of the irritating cause takes place or that it is removed. This elimination or removal can be the result of surgical interference, but often also it takes place spontaneously, principally when the causal substance is loose or when its dimensions are such that it can be carried away outside by the flow of the purulent discharge.

There are again other conditions for fistulas to exist, as for instance, when they are the consequence of the accidental or intentional introduction of a foreign body from surroundings outside and therefore infected. Or again it is a deep wound which does not heal and becomes fistulous because of the existence of a certain part, in the depth of the tissues, of a purulent collection situated on a lower plan than the external opening of the fistula and which as a result cannot empty itself entirely; the accumulation of the pus then becomes the condition that keeps up the fistulous tract, because the discharge goes on only when the purulent sac being full allows its escape. Generally, but few are the fistulas which have not such origin and the general therapeutics of these accidents is easily indicated. The artificial elimination of the foreign body by any of the known surgical means, or in some special cases facilitate the escape of the pus by the free incision of the fistulas down to the seat of the cause or by a counteropening or again by draining of the tract.

There may, however, be cases, even if they are rare, where these ordinary means of treatment cannot find their applications. Prof. Hendrick relates one of pelvic fistula in a mare which has given him the opportunity of resorting to a mode of successful treatment deserving publicity.

The case described at some length by the professor can be resumed concisely. A mare had a difficult parturition and the next day an enormous swelling had taken place on the right side of the hind quarters, the croup, the thighs, perineum, leg, mammae and lower abdominal regions were invaded. Vaginal exploration revealed a large hematoma and a wound of the mucous membrane on the right side of the vagina. After a few days, fluctuation was detected below the vulva; it was tapped the hematoma of the vagina became suppurating, and by the introduction of the hand into the vaginal cavity a circular wound with indurated edges was detected on the right wall. This wound was continued with a tract 41 centimeters long, which ran downwards and towards the anterior border of the pubis. A probe was introduced in the tract, and as it seemed impossible to locate the bottom of the fistula and make a counter opening, the probe was secured by two stitches, with the intention to use it to carry on the treatment.

Thorough washing, injections of permanganate of potassium, peroxide of hydrogen, chloride of zinc, Van Swieten solution, all were successively tried, but after one month the purulent discharge was as abundant as the first day by the vulva and by the perineal wound.

It was after those failures that Prof. Hendrick made another attempt which at last was successful.

"He took 20 grammes each of white wax and of paraffine, added 120 grammes of sub-nitrate of bismuth and mixed them with 240 of white vaseline. As at the ordinary temperature, this mixture gets quite hard, it is necessary so as to inject it with a syringe, to place it in a basin with hot water, and have the contents at about 45° C. Then the mixture is syrupy and

can be drawn in the syringe which is itself heated at the same temperature. The injection can then be readily made."

This was done with the fistula of the mare. After 24 hours the tract was transformed into a hard cord-like, formed by the mixture which had become hard at the temperature of the body. The discharge gradually diminished. The animal showed no annoyance by the treatment. Her general condition improved and ten days after all pus had stopped. There was no more discharge and the recovery was complete and lasting.

Whatever was the action of the medicines composing the mixture, the results were certainly very satisfactory and may receive their logical explanation by further experiments. At any rate, it is but the application of a method which is known as the Method of Beck, and which has already been employed and recorded by our American confrère, Doctor Leshe.

It is certainly worth knowing; to be used in other similar instances.

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INTESTINAL OBSTRUCTION IN CATTLE.—Professor Mossu states that colics in bovines are generally manifested by such characters that they can be classified in two distinct groups: those by congestion and those by intestinal obstruction. This second group is far the most important, involving as it does the accidents due to invagination, strangulation, obstruction and torsion of the intestines. They are all extremely serious and ordinarily end in death, unless a surgical operation interferes or an exceptionally fortunate hazard comes at the proper time to remove the obstacle to which is due the arrest of the progress of the alimentary products.

With the exception of the pelvic strangulation in males and the very cases where the location of the invagination can be established, there is always an existing doubt as to the cause of the intestinal obstruction. The diagnosis of the trouble is not difficult, as after all the great symptomatology tells it quite plainly: the sudden apparition of very violent colics of variable

duration, generally several hours; complete anorexia for any kind of food; total arrest of defecation after the time necessary for the evacuation of the contents of the intestines in the part situated beyond the point of obstruction say 12 or 24, or 36 hours; general prostration with a lowering of the temperature; depression of the pulse; loss of strength; semi-comatose condition; sinking of the eyes in the orbits; general loss of sensibility.

To those general common symptoms may be added other secondary manifestations; tympanitis more or less severe, localization of pain in a given region of the right flank; gurgling more or less loud in the pre-iliac region, bloody mucusities expelled after hard efforts for defecation, careful laying down, etc., etc.

But with all those, it is not possible to localize the spot of the obstacle causing the obstruction. Only an exploring laparotomy would permit such a solution; but is a step which would be admitted only under very exceptional conditions. If one was sure that the intestinal obstruction was due to a simple twisting, to a strangulation, perhaps a surgical interference would suggest itself. But there are so many conditions and economical reasons in veterinary practice that practitioners will almost always decline to assume the responsibilities of an attempt.

As besides all that, there may be some extraordinary conditions of origin, so unexpected or so particularly singular that the fatal ending of the case could not have been avoided. This indeed is well illustrated by the case which called for these remarks published in the *Recueil* under the heading of "Repeating Intestinal Obstruction."

It was in an aged cow which had to all appearance always been in good health and which was suddenly attacked with colics, which, with the other manifestations, left no room for doubt in the diagnosis. It was a case of intestinal obstruction with undiscovered cause, and a fatal issue was looked for, although the author had known of one case of invagination, where the patient

remained 21 days sick and without eating and finally recovered by the spontaneous elimination of the invaginated intestines.

The cow presenting all the symptoms was placed in observation and without treatment. After a few days the condition of her bowels improved, feces became less offensive, general bad condition subsided some, and recovery seemed possible. But after ten days new symptoms of intestinal obstruction returned and notwithstanding strong purgatives, the animal died without the cause of the intestinal trouble being suspected.

The post mortem gave the explanation. The abdominal organs were free from lesions, but at the level of the stoppage of the alimentary contents there was a slight strangulation of the intestines and by palpation a hard elongated body was detected closing the cavity of the bowels. It was the cause of all the difficulty. "It was a polypus, a myoma, measuring ten centimeters in length having a peduncle at its anterior end, and free in the entirety in the intestinal canal, which he obliterated almost entirely. Its attachment on the small curvature had given rise to the slight strangulation of the intestine with a limited twisted motion of the two segments, above and below, of the bowel."

It is easy to understand how by this condition of the polypus, obstruction would repeat itself at various intervals according to the position and the displacement that it might assume. And it is also admissible that these similar repeated occurrences of colics had already taken place and possibly were overlooked. At any rate it is a new possible cause to be added to the long list of those of intestinal obstructions.

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CUTANEOUS CANINE FILARIOSIS.—This name, applied to the disease produced by the presence in the circulatory apparatus of dogs of the *Filaria Immitis*, has been recently the object of a publication in the *Clinica Veterinaria* by Doct. Domenico Zibordi, adjunct professor to the school of Milan.

First, in a kind of introduction to the subject, the doctor relates the fact that while the disease is an exotic affection, proper to Japan, China, Tonkin, India, North and South America, it must also be remembered that Europe is not exempt from it and that cases have been recorded in almost every country of Europe. He then gives a concise résumé of the common seat where the adult parasite is found, viz.: in the right heart, more frequently in the ventricles than in the auricles, in the subcutaneous and intramuscular connective tissue, not unfrequently in the pulmonary artery and vena cava and their ramifications, and exceptionally in the left heart and the arteries of the great circulation. Embryos of the parasites are always found in the blood.

After this concise consideration relating to the seat of the disease, Prof. Zibordi makes a very long excursion into the bibliography that he has been able to review. While it is to Delafond and Gruby that belong the merit to have in 1843 demonstrated the presence of embryos circulating in the blood of a dog, which had adult worms in the heart and large surrounding blood vessels and again gives credit to Rivolta for having first recorded a case of cutaneous filaria manifested by the presence of an herpetic eruption on the neck of a dog, in which by microscopic examination, the crusts of this eruption were found full with filaria. He then alludes to the many cases recorded by Silvestre, Oreste, Ercolani, Galtier, Rivolta, Lanzillotti, Buonsanti, Siedamgrotzky, Shattch, Earl, Nogueria, Deffle, Wright, Raillet, Rosso, Nazzanti and many others and he mentions the seat where adult worms were found at the post mortems of the dogs affected: (heart large blood vessels, pulmonary, cerebral, splenic and hepatic, subcutaneous connective tissue, lungs, uterus), and calling special attention to those of Rivolta, who in 1868 observed a case of herpetic eruption due to filaria, of Siedamgrotzky who had seen in a dog on the external face of the thighs and of the shoulder, small pustules, where the pus contained small filarias, of Rosso who on the skin of slugs had observed numerous small papules containing worms of their embryos; of Fettich who had found them under the skin of the

forearm of a greyhound, of Schneider who described a case of diffused dermatitis in which also small worms were detected—all of which proved beyond a doubt that cutaneous filariasis does exist; the author concludes his long article by the minute description of four personal observations which come to add to the value of those already on record and confirm several of the facts actually known relating to the disease.

The fact of cutaneous manifestations is a very important one in relation to the therapeutics of the disease. An early positive diagnosis being of paramount value. Has the disease remained localized to the skin or is it already generalized in the entire circulation, is then of the utmost primary necessity.

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URINARY VESICAL TUBERCULOSIS.—The pathogenicity of this affection has already been the object of many researches. It is generally admitted that the vesical lesion is consecutive to a tuberculosis of the kidneys or of the genital organs. Primitive tuberculosis of the bladder is only exceptional, at least clinic and experimentation agree on that point.

Indeed, from the experiments of Hanau, Cayla, Guyon, Roos-
ing, Baumgarten, Hausen, the possibility of grafting the bacilli
of Koch upon a bladder, seat of trauma or affected with reten-
tion has been confirmed and direct inoculation by instillation is
exceptional. Besides these, experimentation has also shown
that the local lesion follows an ascending process, which from
common cystitis may become a caseous abscess of the walls and
it also confirms the frequency of the extension of the lesions to
the genital organs with the rarity of renal ascending lesions.
Human clinics demonstrate also the relative innocuity of vesical
tuberculosis in man, the rarity of its spreading to thoracic or ab-
dominal organs, the slow progress of its evolution and the possi-
bility of its recovery.

Mr. Maurice Breton has reported in the *Annales de Pasteur*
a series of experiments that he has made on quite a large number

of guinea pigs and rabbits to the effect of controlling the general conclusions presented above, and to study how the infection may be realized by the direct entrance of the bacilli into the bladder by the urethra of those animals and also the anatomo-pathological characters of the lesions with the mechanism of the propagation of tuberculosis to other organs close by or far away.

From the description of the experiments made, the conclusions derived from them are as follows:

1. Tuberculosis infection of the healthy and sound bladder by urethral entrance is easily realized in guinea pigs, but more difficult with rabbits.

2. Renal infection is never realized by ascending process. It is generally admitted that it takes place by the blood circulation. But in the cases where the lesions of the genital organs precede those of the kidneys, it is believed that the tuberculous products are taken up by the circulation from the bladder or the prostate and infect the glomerules. The experiments of Breton show on the contrary that in animals, guinea pigs or rabbits, the infection takes place by the lymphatic vessels. The bacilli travel through the thoracic duct and are poured afterwards into the general circulation. They must have passed through the sub-lumbar and mesenteric lymphatic glands to reach the circulatory current. It is then after leaving the lymphatics that the infection becomes hematic.

3. The experiments are thus another evidence that the frequency of tuberculous pulmonary infection is taking place by the lymphatico-hematic circulation.

TOXIC AND MEDICAMENTOUS MILK.—The question of the passage of toxic and medicamentous substances through milk and of their possible injurious effects thereof, has been the object of a series of experiments and observations by Prof. Porcher of the Lyon veterinary school, which he has recorded in and which I extract from the *Presse Medicale*.

Milk in its organoleptic qualities, coloration and especially odor and taste can be modified by the addition in the food of

some plants, which do not enter in the ordinary diet (anise, garlic), etc.

The elimination of mercury through the mammae has been the object of discussion. But for Porcher, mercury is indeed eliminated by the milk. But the quantity eliminated is always very limited and at times very irregular. Relatively large doses of mercury salts are required to have a marked presence of the metal detected in the milk. Other metals, lead, copper, zinc, antimony, bismuth, arsenic, iron have also been found being eliminated through the milk.

The passage of salicylate of soda is not doubtful, but it is very limited and its presence is not injurious to the quality of the milk. With iodine the detection is readily made. Anæsthetics also, ether, chloroform and alcohol are eliminated by that source. But very large doses are comparatively necessary before they are detected. Chloral is likewise. As for antipyrine the proportions of quantity eliminated are very small.

The passage of alkaloids in milk is rather difficult to appreciate as the doses administered must be very large and give general intoxication for their presence to be detected in the milk.

To resume, it may be considered as certain that when the mammae eliminate some toxic or medicamentous substances, which have been administered with a therapeutic or experimental object in view, this elimination is always very limited and the dose, which has been given must have necessarily been considerable to allow the detection in the milk of their presence and yet that will be in very small quantity which will be an *infime* proportion in relation to the dose given.

The udder in normal function is not only a filter and its functions as an emunctory are very small. The mammary cells select from the elements that the blood vessels bring them, those that are indispensable for the elaboration of the elements constituents of the milk.

But if a toxic diet, reduced or temporary, has no great effect upon the quality of the milk, it is not the same when to the factor "nocivity" are added those of "continuity" and

"great quantity" as it is the case with cows fed on industrial remains.

OVARIECTOMY AND TUBERCULOSIS.—To have these two conditions brought together may seem strange in a periodical like the REVIEW and yet perhaps there may be some practical applications derived from their connections in human medicine as I find them related in an extract from the proceedings of the medico-biological society of Milan, referring to a communication made by Doct. F. Mirto. Gynecologists are divided into two camps, on the question of the opportunity of the prevention of pregnancy in tuberculous women. Some advocates of the sterilization of tuberculous women, perform vaginal hysterectomy with removal of the ovaries. After the operation, an improvement is observed in the general condition of the patient, improvement which from want of positive data are interpreted as due to an unknown action analogous to that of single laparotomy in tuberculous peritonitis.

In 1903 Dr. Mirto published a book on "Experimental infection after Ovariectomy," where it is shown that the operation renders the organism more resisting to an infection. From this he has thought that perhaps the improvement in tuberculosis after hysterectomy might depend from the ovariectomy and he then made experimental researches to verify this supposition.

To ten does he injected in the veins of the ear 1 c. c. of an emulsion of tuberculous bovine culture. Five of the does were castrated after fourteen days; they died in average 31 days after the operation. The control animals lived only fourteen days. In a second experiment, with 10 new does, 1 c. c. of emulsion diluted by half was injected and five of these rabbits were castrated 18 days after. The witness animals died in 24 days, and the castrated in 51.

These first experiments have a tendency to show that ovariectomy has a favorable influence on the course of tuberculosis or at least on extending life. Dr. Mirto proposes to make other experiments on a large number of animals and principally to

realize an infection of slower activity which would allow a positive settlement of the question.

BIBLIOGRAPHIC NOTES.—It is a peculiar fact, but very seldom is a new scientific book published, without being offered to its readers with a special call to them. This I have observed with almost every new work, whether of human or veterinary medicine. The call is to students and practitioners. This is very well probably for the former. But is it as well for the latter? Of course, the new book can, and is certainly intended principally for the students as in all probabilities the contents will be of new and great interesting value to them. But unless the publication contains new facts, new theories, new discoveries or any thing similar, which the practitioners may not know or have possibly forgotten then will it not look as if after all the new book can be considered then and only then as written for him as well as for the students. At any rate, it is a fact that new books are generally intended or supposed to be for students and practitioners as well.

Of course the one that I have received from the house Alexander Eger, of Chicago, "A Text Book of Veterinary Pathology," by Prof. A. T. Kinsley, M.Sc., D.V.S., of the Kansas City Veterinary College, is for students and practitioners, so it is stated in the preface.

Veterinary Pathology has a special object in view, "namely to consider and place every phase of pathology from the veterinarian's point of view." No doubt a very good desire. As if it is true that works are many on the same subject in human literature, up to this new issue, none existed in English language *at least*, which was *strictly* covering the same ground and in the same manner that Prof. Kinsley does.

The contents of the book are divided into twelve chapters (1, the Cell; 2, General Consideration of Disease; 3, Immunity; 4, Malformations; 5, Circulatory Disturbances; 6, Inflammation; 7, Progressive Tissue Changes; 8, Retrogressible Tissue Changes; 9, Necrosis and Death; 10, Tumors; 11, Fever; 12, Infective Granulomata, and last but not the least, a valuable

glossary). There are also five inserta; botanical names, bacte-
terias, protozoa, helminthes, arthropods. There are also 205 il-
lustrations, most of which are very good, but unfortunately dis-
tributed in a rather peculiar manner here and there through the
book and mixed in the reading matter which complicates the
reading.

The manner in which the book is presented is a credit to the
author and the publisher. Neatly printed, easily read, hand-
somely bound, but why is the binding made in such a way that
the insertia cannot be looked into.

However, "Veterinary Pathology" is one successful effort
from which all students, we are sure, will learn much and after
all practitioners cannot fail to refresh their mind by reading it.
We hope that another early revised and enlarged edition will
give a better opportunity to the author to do ampler justice
to some of his present chapters which are perhaps too concise in
the present issue.

I do not know if I can examine and do justice to the addition
that Prof. Cadeac has made recently to his Encyclopedia,
by the publication at Bailliere of Vols. 3 and 4 of the second
edition of Internal Pathology. The general arrangement fol-
lowed in the previous issue of that excellent work has been kept
and successively the diseased processes as they occur in the
various species of domestic animals are considered. Additional
new facts are here and there interlaced and parts which were
possibly not as complete as they might have been have received
the necessary corrections and additions. On that account these
two new volumes are considerably enlarged as well as they are
revised.

In the third volume is concluded the continuation of the
second, viz., the end of the digestive apparatus. A chapter for
the pancreas. A very complete treatise on the pathology of the
liver and one on the diseases of the peritoneum. The book then
begins the consideration of the respiratory apparatus, nasal cav-
ities, sinuses, and larynx. It covers a work of 500 pages with
156 illustrations. The fourth volume embraces the pathology

of the bronchia, lungs and pleura; it is the work which might be said essentially that of the respiratory organs; the subject is treated in over 450 pages and has 86 illustrations.

By the publication of these two volumes of internal pathology, a valuable addition is made to veterinary literature by its author, whose literary energy seems to have no limit.

A. L.

ANTISEPTIC VS. GERMICIDE.

" Since germs have been discovered and determined to be the cause of various morbid conditions many new terms have arisen in the literature of the subject. Some of these have answered for temporary use until more accurate terms were found to take a permanent place in our language.

In accurately differentiating between terms we have yet to become accustomed to the exact meanings of the words antiseptic and germicide. Heretofore they have been used interchangeably as if they were synonymous.

If we are to be more exact in our language in the future we must limit the word germicide to those agents or processes which definitely destroy or kill disease germs. Nothing less than that will comply with the meaning of the term. It is doubtful if we have any agent which is capable of doing this which is safe to use in or on the human body. The two standard agents referred to when this term is used have been carbolic acid and bichloride of mercury; although in the strength in which they are required for this action they are far too poisonous for use.

For example, according to a report of the Council on Pharmacy and Chemistry of the American Medical Association, a 1 to 5,000 solution of bichloride of mercury does not kill the *staphylococcus pyogenes aureus* in five minutes' contact. That is, it is not germicidal in that strength in that length of time; yet it is highly poisonous to the individual if kept in contact with an absorbing surface for that length of time. We have in the past few

months published several articles calling attention to the injurious effects of bichloride when used as a local antiseptic.

The dangerous effects of carbolic acid are so well known that we need hardly refer to it here. The following extracts from Hare's Therapeutics will show how the question is viewed in recent literature:

"A large number of cases are on record in which carbolic acid poisoning ensued from absorption from surgical dressings."

"When iodoform is absorbed by the stomach or skin from surgical dressings, it induces a train of serious and curious symptoms."

"Bichloride of mercury, even in this dilute lotion (1:10,000), has, when used in the peritoneal cavity, given rise to toxic symptoms."

"Koch stated that where albumen was present, bichloride was decomposed and rendered inert."

An agent may be markedly antiseptic, that is, it may inhibit the growth of disease germs, without being specifically germicidal and without being injurious to the human organism. A recent report from the Council on Pharmacy and Chemistry shows us that chinosol is such an agent to a very high degree. According to the report of the Council, chinosol forms no precipitate in any dilution, while carbolic acid forms a slight precipitate in dilutions of 1 to 100 and 1 to 200, and mercuric chloride forms a heavy precipitate in all dilutions up to 1 to 1,000, and a less heavy precipitate in 1 to 5,000. The report of the Council shows that chinosol is an efficient antiseptic and yet is not poisonous. Neither is it irritating or caustic to the skin or mucous membrane. In fact, it is an ideal antiseptic agent.

Years ago we used a solution of chloride of ammonium as a lotion in minor surgery. It was not germicidal, yet it was highly antiseptic and excellent results were obtained with it. However, it was so irritating that we finally quit using it. Let us bear in mind the difference between a germicide and an antiseptic."

The above from *The Medical Council* of November, 1910, is interesting because it stimulates a train of thought along lines

that are not usually clearly outlined. The two terms in question suggest different applications. For example, we think of antisepsis as against or preventing sepsis, and of germicide as killing germs, and yet each of them do exactly the same things, and the definitions of each, in our medical dictionaries arrive at the same ends. *Dorland's Medical Dictionary* defines an antiseptic as 1. "Preventing decay or putrefaction. 2. A substance destructive to poisonous germs"; and gives as some of the chief antiseptics, "alcohol, boric acid, carbolic acid, creosote, corrosive sublimate, common salt, charcoal, chlorin, tannic acid, sugar, and vinegar."

The same authority defines a germicide as "an agent that destroys germs." No examples are cited. Antiseptic is derived from two Greek words meaning *against* putrefaction and Germicide from two Latin roots, *ger'men*, *germ* and *cae'dere to kill*. So that one is against putrefaction, and therefore *destroys* it when it meets it and the other *kills* germs. Obviously their functions and uses are identical, and the same agents may be employed against putrefaction either as an inhibitive or a destructive in varying degrees of strength. *The Medical Council* states that "an agent may be markedly antiseptic, that is it may inhibit the growth of disease germs, without being specifically germicidal" * * * and further on places *chinosol* in that class. In substantiation of our above contention that varying degrees of strength constitute the distinction, we may state that it has been demonstrated clinically that the substance mentioned, chinosol ($C_9H_6NO_2SO_3KH_2O$) oxychinolin potassium sulphonate, is a germicide. We are grateful to the editors of *The Medical Council* for the opportunity of reading their article, which we have reproduced with the hope that it may act as a stimulus to some members of the veterinary profession to discuss the subject through the columns of the *REVIEW*.

As we are closing our forms we learn with much regret of the death of Dr. W. H. Gilbert, of Leesburg, Ohio. The doctor had been a constant reader of the *REVIEW* for upward of twenty years.

ORIGINAL ARTICLES.

ANENT THE PROPOSED "UNIFORMITY OF DEGREES FOR VETERINARY COLLEGES."

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I. INTRODUCTION.

I. Dr. Liautard and Dr. Glover on Veterinary Degrees.

By a happy coincidence, in the February, 1911, number of *THE AMERICAN VETERINARY REVIEW*, there occurred the publication of two articles, nay three, all referring to uniformity of degrees for veterinary colleges. Dr. Liautard, though strange to say with little of his usual Gallic bitumen, reports (p. 589) that, by the decree of Kaiser Wilhelm, "the Prussian veterinary schools of Berlin and Hanover will now confer the degree of Doctor Medicinæ Veterinariæ*" on those who successfully complete the course. Dr. G. H. Glover, of Fort Collins, Colo., also, has in the same number an article on "Uniformity in Degrees and Matriculation Requirements for Veterinary Colleges" (pp. 634-641), and, in his open letter to members of *The American Veterinary Medical Association* (p. 686) says: "In the matter of uniformity of degrees, it is absurd having so many degrees all meaning the same thing. Let us resolve to be magnanimous in this matter and say that we will make the change if the majority vote for some other degree. The cost would be only nominal; the price of a new stone for printing diplomas in some cases. The objections, with selfishness eliminated, are not serious."

* In the *REVIEW* the word is erroneously printed *veteranariae*.

In this communication I propose to make some remarks which seem to me apropos, anent the statements of both of these gentlemen.

II. VETERINARY DEGREES TO BE CONFERRED IN GERMANY AND THE PROBABLE EFFECTS IN EUROPE.

1. *The Decree of the King of Prussia Granting the Right to Confer Veterinary Degrees.*

As write I have before me the October, 1910, number of the *Zeitschrift für Fleisch und Milchhygiene*, the great journal published by Robert Ostertag in Berlin. On page 28 of the issue there appears in the *Tagesgeschichte*, or news of the day column, an important notice, printed wholly in italics for the sake of emphasis, that, at last, the title Doctor of Veterinary Medicine is to be conferred on graduates in Prussia. The Emperor of Germany, who is also king of Prussia, has promulgated by royal decree the notice that hereafter the Tierärzliche Hochschule (Veterinary High Schools), corresponding to our veterinary colleges, in Prussia, shall have the right to confer, under certain restrictions, the title of Doctor of Veterinary Medicine upon their graduates. The institutions referred to are the Veterinary High Schools of Berlin and Hanover, the leading veterinary institutions in Germany, which were established more particularly to train veterinarians for the German army, and the graduates of which, who happen to be Germans, must, on the completion of their course, serve as army veterinarians for a period of years. Hitherto the title of "Doctor" has never, as far as I can discover, been conferred by institutions of veterinary science in Germany.* Nor is this particular title, that of Doctor of Veterinary Medicine, as far as I know, conferred to this day in any

* Dr. S. E. Bennett, Inspector in Charge, Bureau of Animal Industry, U. S. Department of Agriculture, Chicago, informs me that, when he was a student at Hanover Veterinary High School in Prussia, he knew of instances where men had veterinary degrees, which he believed were conferred in Germany. My opinion is, however, that he is mistaken. In my reading of German papers and books I do not recall ever seeing a name with the abbreviation, signifying a veterinary degree, printed after it. (D. A. H.)

other country of Europe. Before the present imperial German decree the only title permissible, for those who passed all the examinations of the course, was that of "approved veterinarian"; now the title is to be Doctor Medicinæ Veterinariæ, that is Doctor of Veterinary Medicine, which is abbreviated in the German press Dr. Med. Vet., and this is the abbreviation given to the title in the *Zeitschrift* we are quoting.

2. *Veterinary Doctorates Not Hitherto Conferred in Europe.*

In this connection it is worth remembering that not one of the great teachers of veterinary science in Germany to-day has the title Dr. Med. Vet. They are all M.D.'s or Ph.D.'s., and usually they are the possessors of both titles (which is an excellent commentary on what the Germans, by implication, seem to think is a necessary preparation for the best work in veterinary medicine). Drs. Ostertag, Schutz, Schmalz, Koch, Friedberger, Frohner, for instance, all had the title M.D. This fact is not, perhaps, generally known in America. Nor in France to this day is there such a thing as "graduation," the conferring of a degree, in veterinary medicine. About a year and a half ago the French Minister of Agriculture was besought to rule on the matter and to promulgate such a decree in France as Emperor William has done in Germany in his capacity as King of Prussia, permitting the National Veterinary Schools of Alfort, Lyons and Toulouse to confer the title of "Doctor." However he has not yet done so. The other Teutonic states and other Teutonic countries will probably follow the lead of Prussia, so that North Eastern Europe will soon be swarming with Doctors of Veterinary Medicine. Moreover, in Great Britain and Ireland, except the rather uninviting and opaque degree of Doctor of Hygiene, conferred by the University of Liverpool, which has not turned out, perhaps, to be so delectable as was thought when the institution first concluded to confer it, there is no such thing as a title of "Doctor" conferred on veterinarians. Hence in the veterinary and general press the persons who have completed the course in

veterinary science in the colleges, and are practicing, are never referred to as Doctor So-and-So, but Mr. So-and-So. Though, despite British conservatism and insularity, I have no doubt that, in time, even there the title of "Doctor" will be conferred on those who complete a veterinary course. It will be interesting to observe how British veterinarians will take the news from Prussia relative to the degree Dr. Med. Vet.

3. *Dr. Liautard's Inaccuracy in the AMERICAN VETERINARY REVIEW.*

Dr. Liautard informs us, in his recent communication, that, "in abbreviation the title (Doctor Medicinæ Veterinariæ) will correspond to the D.V.M. of some of our American schools." Perhaps so! Yet that is not the way the Germans themselves abbreviate the title; nor is it the way the article in the *Zeitschrift* puts the title. The article is headed in bold, black type, "Dr. Med. Vet. in Preussen." Dr. Liautard is a staunch believer in uniformity of entrance requirements for veterinary colleges, uniformity of curricula and uniformity of degree. My impression is, from at least two articles he has written on the subject which come to memory, that he favors the conferring of the title Doctor of Veterinary Medicine on the completion of the veterinary curriculum, which, apparently, he would abbreviate D.V.M. It is however, questionable whether the Germans will so abbreviate the title created for them by the imperial decree, and whether they will place the letters according to that arrangement (D.V.M.). And this leads me into the general discussion.

III. THE DIFFICULTIES WHICH WILL BE ENCOUNTERED IN AN ATTEMPTED REFORM OF VETERINARY DEGREES IN AMERICA.

1. *The Genesis of Veterinary Degrees in Germany.*

Dr. Glover champions the uniformity of degrees for veterinary colleges and is of the opinion that objections to his scheme, with selfishness eliminated, are not serious. In Germany it will

be a comparatively simple thing to bring into being a uniform degree and a uniform putting in abbreviation of that degree when it is placed after names of possessors in writing or in print. The word of the King of Prussia creates the title for Prussia, and, because he is also Emperor of Germany, by custom his desires will be followed in all veterinary schools throughout the empire. Denmark, Sweden, Norway, Austria will follow suit. France, not to be outrivaled, will adopt the same degree. The British, not to be outdone, will eventually also adopt the same plan or a similar one. It is easy to see that there will be uniformity of degree and uniform abbreviation of it and arrangement of letters in European countries. Its genesis is simple—the decree of an emperor; its uniform method of abbreviation easy—custom based upon the original decree of a potentate.

2. *The Conferring of Veterinary Degrees in America.*

But the genesis of veterinary degrees or titles in America is far different. Here we have conferred titles galore on those who have successfully finished veterinary courses. It is now Germany's turn; though she will stick to a single title—the Germans will not have kaleidoscopic veterinary titles. To me the most amusing thing in our profession to-day is the titles with which we are loaded, and the barnacle-like tenacity with which we cling to a particular arrangement of letters, for their abbreviation, which college or university has given us the right to place after our names. Dr. Glover will find, if he has not already done so, that, instead of entering upon an easy undertaking to bring about the reform from variegation to simplicity of veterinary title, he is shouldering a very difficult task. What is the sum total of men now living who have graduated at American veterinary colleges since they began to confer degrees some forty or fifty years ago? Nobody knows; perhaps nobody will ever know. Just what are the titles which have been conferred? Place the titles and figures in columns! Look at them! What

material for the satirist! What a choice subject for a lampoon! Every American, from your tonsorial artist to your portly preacher who had just donned his D. D., dearly loves a title; just as every Englishman, it is said, dearly loves a lord. Thousands of veterinary "graduates"; a score of titles! Several generations of men must pass away before all these high-sounding titles, these assemblages of capital letters, affixed to names, will, should the proposed reform ripen, have disappeared.

IV. THE THREE ASPECTS OF THE QUESTION OF UNIFORMITY OF AMERICAN VETERINARY DEGREES.

The question of the uniformity of degrees for American veterinary colleges has three aspects: first, the historical aspect; second, the present-day aspect; third, its future aspect should uniformity of title be established.

1. The Historical Aspect of the Problem of Uniformity of American Veterinary Degrees.

The Use and Abuse of the Doctorate.

The multitude of designations, the chaotic condition of affairs with regard to degrees, the ludicrous situation—enjoyable material as it would be to a cartoonist who would make merry over us and afford much amusement to the public if he should make use of it—we have brought upon ourselves. We, who wish nothing more than to have our profession taken seriously, have left all doors open for an attack upon us. We think, perhaps, we are not thin-skinned; but, should our vulnerability be tried by the cartoonist who seizes upon the opportunity we have left him to sketch us as we are, we would prove not to be so impervious as the rhinoceros. The history of American veterinary titles is not difficult. In its historical aspect the problem is not hard to understand. The colleges, from the earliest days, knew that those who finished the course must be dubbed "Doctor."

This is the accepted appellation for anyone who completes any course with the word medicine found in it, and whatever is its application in practice. Besides the word "Doctor" preceding the man's name, or called out in his hearing, immediately appeals to the American and sets him up by the ears. As a matter of fact, though, on this side the Atlantic our people, who relish contradictions, have cheapened the title "Doctor" by the promiscuity with which they have used it—they are pleased with the sound of it, but they tinge it with vulgarity in its usage. Here in Chicago we have men who go from house to house destroying vermin who call themselves "roach-doctors"; we also have doctor-chiropodists who "doctor" our toes. I am afraid we of the veterinary profession in America are, or have been, guilty of the same sort of vulgarity. We have not taken the dignified title of "Doctor" with sufficient seriousness and this has damaged us in the public mind.

The Rivalry of the Colleges and Veterinary Degrees.

Nor is this all there is to the historical aspect of reform. A review of the history of the giving of veterinary titles in America shows that the variety of the titles conferred was due, in many instances, to the rivalry of the colleges. Competition is an excellent thing in trade; but, carried too far, it brings harm to educational institutions that are willing to go to any lengths to outdo each other. From the beginning of veterinary education in this country this rivalry has existed, and it has, sad to relate, intensified and become, I fear, more vulgar as time has gone on—or at least it has, in many degrees and shades, cheapened the profession, and had the flaw of vulgarization in this matter of variegation of veterinary titles. Is there any other explanation for the existence of them? There is none. The lame excuse can hardly be offered that they are due to the fact that the officials of the different colleges did not meet for agreement on policies. The consequence is that an evil has been done which cannot be effaced in our own or the next generation. Thousands of titles

have been given which cannot now be expunged—only the agonizingly slow processes of time can wear away the large, funny titles from sign boards and door fronts, until the hour shall finally come when we shall see them no more on letter heads nor in the newspapers.

2. *The Present-Day Aspect of the Problem of Uniformity of Veterinary Degrees.*

The Uniformity of Degrees Granted in Other Professions.

What is the present-day aspect of this question of the uniformity of degrees for veterinary colleges? We find ourselves open to contempt and are making ourselves and our work ridiculous—stuff out of which lampoonists may make capital. What is more, we are doing it in face of the uniformity of degrees given to graduates in the other professions. An M.D. is an M.D. the world over, whether the degree is won at Buda-Pesth, Edinburgh, New York, or anywhere you please. What means this foolish talk that the words embraced in a title signifying the veterinary degree should direct public gaze to the surgical side of the work? Have the eminent surgeons in the human medical profession, like Senn, Murphy, Stimson, gone about lusting for so strange a title as S.D., signifying Doctor of Surgery, or are they not satisfied with M.D.? Neither do they think they are lessened in the esteem of the public as surgeons by signing themselves M.D. Does not custom and the law require them to sign themselves by the time-honored signification of graduation the uniform abbreviation of title, M.D.?

Uniformity in Abbreviation of Veterinary Titles Necessary.

The present-day aspect of the case is not improved by the fact that the problem is not only one of the advisability of adopting a uniform degree for veterinary colleges, but the desirability of arriving at a conclusion how the letters signifying the title shall be placed after the name of the possessor of the title. Dr.

Liautard seems to conclude that the title Doctor of Veterinary Medicie should be abbreviated and written D.V.M. Dr. Glover, if he has not lost sight of the fact, which is unlikely, at least does not make enough of the fact that if the title Doctor of Veterinary Medicine becomes acceptable, by kind persuasion, or by "elimination of selfishness," to all, we have still the question how shall the letters signifying the proper abbreviation be placed. Cornell, Ohio State and Ames men sign themselves D.V.M. Pennsylvania men tenaciously hold to V.M.D. Harvard and McKillip men will have it that the letters should be M.D.V. There are reasons for all this. Can there be uniformity; can agreement be reached? We must do so. There is no alternative. What we want is the attention of the public directed towards us and fastened upon us. We must, it is inexorably necessary, reach an agreement on a uniform title and uniform manner of putting the title in order that the public may become rapidly trained to accept the one title as the sign of the profession, just as the title M.D. signifies that the holder is a member of the medical profession. Commercially it is sheer waste, this disparity in degrees. In uniformity there is strength; in dissimilarity there can be nothing but friction.

3. *The Future Aspect of the Question of Uniformity of Veterinary Degrees.*

Should uniformity of degree be adopted the change will bring another aspect to the problem in the future. When men from each college have the same abbreviated title this will not eliminate the rivalry between the colleges, or rather I should say that emulation which adds keenness to the scientific work done in them, and is the very salt of progress. The man from Pennsylvania may say I am a D.V.M.; the man from Kansas City or San Francisco, or where you will, can say the same thing, should, for example, the title and abbreviation become universally acceptable. The same is true whatever title be chosen. Nor would I have other than rivalry between the colleges. When any insti-

tution settles down to smug contentment with itself, or reaches the baneful conclusion that it is beyond a doubt superior to all others and outshines all, it is in the position of the man, mentioned by King Solomon the Wise, whose pride came before his destruction and whose haughty spirit came before his fall. In case it seems desirable to a man to point out where he graduated, when he writes out his title, he will, if he follows the universal custom, parenthesize his college, thus: John Smith, D.V.M. (Ohio State). This is a form used the world over. Men in England always say _____, M.D. (Oxon.) or M.D. (Edin.). Men in Germany say Ph.D. (Berlin), or Ph.D. (Göttingen). In the United States, more and more, following the European custom we are writing _____, M.D. (Yale) or _____, M.D. (Harvard). There cannot, therefore, be any argument brought against the plea for uniformity of degree on the score that it is colorless, that the one title does not point out where a man was trained.

V. CONCLUSIONS OF THE PRESENT WRITER.

1. *The Times and the Customs of Our Day Require That a Uniform Degree be Conferred.*

We must be malleable and ductile to the conditions of the times in which we live. We must obey the prevailing sentiment of the countries in which we live and the people whom we serve. O, tempora; O, mores! said the great Roman in one of the Cicero-nian orations. O, times; O, customs. We are the servants of the times and customs and must give heed to their dictation.

2. *The Futility of Titles.*

At bottom what boots it whether we have a degree or not before we enter upon the practice of our profession. The great English painter of pictures of the heavens and the seas—Turner, to whose works a whole room is devoted in the British National Gallery—was once asked by a man, who was looking over his

shoulder as he worked at the easel, how he mixed his paints to bring about his multitude of hues and shades. "With brains, sir," was the quiet reply. It matters not in reality whether a man has a veterinary degree or not; nor how he signs himself, whatever twist he gives to the letters signifying his degree, so long as he has veterinary knowledge and can apply it usefully. Were it not that the times and customs demand a title and a uniform putting of it, I would not be able to find any sufficient reason for having a title at all. Degrees do not make men. They are useless verbiage if the man possessing them is of no account; and the man who is of account hardly needs them. There are instances in our day of men standing high in their profession; yea, more, counted great educators in their professions, and holding university posts, who never possessed a title Judge Cooley, the celebrated Dean of the University of Michigan Law School, the authority on American Constitutional Law, never so much as had a baccalaureate degree in law conferred on him. Cuthbert Pound, now Associate Justice for life of the Supreme Court of the State of New York, was for years a Professor of Law at Cornell University, though he held no law degree. In our own profession Professor Walter L. Williams goes degreeless—he feels that he cannot conscientiously so much as write himself V.S. Though, whatever be his faults, who can deny that he has done the profession much service. Yet he, I think, would be the last one to deny, that, if a man has successfully passed a veterinary course in a reputable veterinary college, the times demand that he must be given a degree, in acknowledgment of his completion of the curriculum.

3. Uniformity of Degree as a Public Question.

Beyond a doubt a degree should be conferred. Beyond a doubt, also, the title given by any or all should be uniform. The times demand it and our increasing importance in the public eye requires that we bow to customs set in the other professions, more particularly in the medical professions, and expected of us.

If we are wise we will pay attention to the ways of the world and bring about the reform now being agitated. Uniformity of degree from veterinary colleges; uniform abbreviation of the words of the degree; uniform placing of the letters signifying the abbreviation of the degree—this reform would be of little cost if it could be brought about. If it cannot, we must hope for nothing but trituration at the hands of some mocking satirist who will seize upon this topic and grind us to powder. Public esteem is everything in the success of a learned profession. That profession which does not take it into account is blind to the necessity for public favor. We cannot live without public favor; we must subordinate ourselves to its demands.

THE many friends of Dr. J. Arthur Goodwin, of New Iberia, La., will be pleased to learn that he has completely recovered from his recent illness.

Two noted worthies were discussing a mooted point in grammar as to whether a hen sits or sets when she takes to her nest. "Seems to me it's a heap more important," interrupted a by-standing rancher, "whether she lays or lies when she cackles."—*Horn and Hoof*.

DR. RUTHERFORD AGAIN HONORED.—Dr. D. A. de Jong, General Secretary of the Commission of the International Veterinary Congress, has recently advised our esteemed confrère, Dr. John G. Rutherford, that he had been appointed as member for Canada on the Permanent Commission. Dr. Rutherford, who never fails where duty calls, has signified his acceptance of the appointment. If our conception of the conditions is correct, the membership is limited to twenty-five veterinarians selected from the various countries of the world; which makes the appointment of Dr. Rutherford a distinction of which the entire profession are justly proud. Canada may be doubly proud, since in selecting her Veterinary Director General as one of its members, Canada has been favored for the first time with appointment to this commission. A meeting of the Commission has been called at Baden-Baden, early in June to commence preparations for the next International Veterinary Congress in 1914.

BOVINE TUBERCULOSIS AS A PUBLIC WELFARE PROBLEM.*

BY M. H. REYNOLDS, ST. PAUL, MINN.

In this study I wish to present first of all the veterinary profession as a public welfare consideration. It is self evident that the veterinary profession must play an important part in any solution of the bovine tuberculosis problem. Everyone who has given any thought to public questions knows well that prosperous agriculture underlies national prosperity. A nation may prosper after her mines have been exhausted, but not after her soil has been exhausted; not after her agriculture has failed. Prosperous agriculture underlies permanent national prosperity and it is just as plain that animal husbandry underlies permanently successful agriculture in this country. Not long since I heard a prominent merchant, a jobber, say in public that they always felt safe in extending large credit and in carrying large risks in farming sections where diversified farming was followed and where the farms were well stocked with domestic animals. When, therefore, the veterinary profession is protecting our animal husbandry, that profession is protecting to a very important extent the entire commerce and prosperity of the nation as well as the wholesomeness of her food supply. The principle is coming into rapid recognition that veterinary education and competent veterinary service are matters of public concern for which the state is justified in appropriating public funds. This is clearly suggested in the movements by so many states establishing state veterinary colleges. This is notably true of Alabama, Colorado, Iowa, Kansas, Michigan, New York, North Dakota, Ohio, Pennsylvania, Washington, with other states already planning to fall

* Presented at the July, 1910, meeting of the Minnesota State Veterinary Medical Association.

into line. If veterinary education and competent veterinary service for live stock interests were not matters of public concern, then there can be no justification for the appropriations of state funds to such ends.

Bovine Tuberculosis as a Public Welfare Problem.—I wish that we veterinarians of Minnesota, and far beyond I wish that we veterinarians of the United States and Canada could do something very effective toward getting the public to realize the magnitude and the difficulty and the importance of tuberculosis among domestic animals.

Everyone who has thought carefully and seriously on this question knows that the problem is tremendously important, that it is important on the score of public health and that it is important on account of the enormous financial interests involved and threatened.

The relation of bovine tuberculosis to human health as a sanitary problem belongs to another address planned, I believe, for this program, and for my part it may suffice to say as pointedly as possible that a great deal of discussion on this question makes me tired. Surely we can sum up the whole situation by saying that scientists who have been studying this problem are clearly divided into two groups: those who believe that bovine tuberculosis and human tuberculosis should be distinguished as due to two essentially different organisms. The other party of scientific men insist that the human tubercle bacilli and the bovine tubercle bacilli are merely variations of the same organism and show no more variations than may be accounted for by difference in environment; but both of these parties of scientific men concede that man is susceptible to the organism if there be but one or to both organisms if there be two; and it seems to me that we need not concern ourselves seriously as practical sanitarians with an academic question.

As an eminent authority has shrewdly observed, either there must be but one organism to which man and cow are both susceptible, or there must be two organisms and the so-called bovine tubercle bacilli which have been recovered from disease lesions

human tissue have been of bovine origin and therefore man must be susceptible to both organisms.

We can get what is probably a fairly good estimate of what bovine tuberculosis costs the United States in direct financial loss from an official statement by Dr. Melvin, Chief of the Bureau of Animal Industry that tuberculosis among farm animals costs the United States annually more than \$23,000,000.00. This estimate is apparently based chiefly upon items which relate to dairy industry and does not make an attempt to give a careful estimate as to the losses to the cattle breeding interests in the form of actual loss of valuable breeding cattle sold at beef prices or for slaughter, nor does it include loss in the form of disturbed plans of our breeders, nor losses in the form of injury and ruined reputations for herds, nor the check which it must put upon the pure bred cattle business.

There are enormous losses from carcasses condemned on account of tuberculosis at our great packing houses—carcasses of both cattle and hogs. Condemnation of such carcasses has become a consideration of such great importance that packers are seriously considering the question as to what can be done about it. Some of them, notably Swift and Company are ready to spend money to help study the problem. During the present year an International Commission of veterinarians, breeders, packers, bacteriologists and government officials has been holding sessions about every three months studying this great problem of bovine tuberculosis control in an effort to formulate well considered and workable plans for states and governments to adopt in their future control work with the disease.

I was so fortunate as to have the privilege of sitting as a member of this commission, and although I have been deeply interested in this question for several years studying every phase of it to which I had access, I confess freely that service on this Commission with these great problems directly in front of us for solution brought a new realization of the magnitude and difficulties of the problem. This commission will make its first report to the American Veterinary Medical Association at San

Francisco in September and it may be confidently expected that a useful service has been rendered toward the control of bovine tuberculosis.

Historical Study.—One who is interested in this problem gets most interesting information from a study of the history of tuberculosis control work that has been attempted by various states of the Union and some European countries. So far as the United States is concerned there has been at the beginning in each of the states a rather amateurish and premature attempt at eradication usually with unsatisfactory and harmful results, or at least results that were for the time being harmful. In many cases there have been irregular testing of herds here and there just to see what might be found. Some owners have really wished to know whether their cattle were sound and others wished to really try the tuberculin test. Such work has been scattered and fragmentary and has accomplished very little except public education. After a considerable period of this kind of work in each state there has followed better organization of individual state work and then usually inspection ordinances providing for tuberculin test of city dairy herds. After these ordinances were adopted and the authorities attempted to put them into force, then there has always followed a period of frantic opposition by dairymen and dealers who predicted dire results that were sure to befall the dairy interests. In most cases these ordinances have led a very uncertain existence with their periods of attempted enforcement alternating with periods of practical neglect. However, this has all served to interest and educate and the people gradually realized in each of these cities that tubercular cattle were something real, that the tuberculin test was here to stay and that milk from tubercular cows was probably not good material upon which to rear their children. The work of scattered testing continued and investigation at any time would have shown that but a very small percentage of the entire cattle in any large section of the state have been tested. Please let me make it plain that I am not speaking of Minnesota experience, but of states in general that have attempted to do this

work. What has happened in one state has happened in another and their history has been very uniform. In the course of time purchasers of pure bred cattle have begun to inquire as to whether the herd in general is free from tuberculosis; just as the city milk consumer has become sufficiently interested to inquire as to whether the dairy from which he is buying milk has been recently and competently tested; whether the dairy methods are clean, and the milk decently handled. About this time the State Dairy Association and Breeders' Association began to pass resolutions calling for the testing of pure bred cattle sold. A few breeders are advertising herds guaranteed free from tuberculosis, every animal sold subject to test.

In point of historical progress that is about the point that we have reached. Minnesota has probably done as much effective work as any other state in the Union, but our work like others, is open to the general criticism of lacking permanence and incompleteness. We are using a great deal of tuberculin and doing a relatively large amount of tuberculosis work, but we are not as yet doing permanent eradication work, and may as well face the issue squarely on the basis of truth. I do not know that any state in the Union or any nation in the world is as yet doing any permanent control work. Dr. Bang's work in Denmark answers as nearly as any other to the requirements of permanence, but actual eradication accomplished in Denmark appears on cold analysis to be slight.

With this study of historical development in several states in the Union I feel like saying that "here we are and what next." I believe that there will come soon a time when public sentiment will support thorough and careful work and when sufficient funds may become available to do large work and that we are justified at this stage in asking what next—justified in recognizing that the preliminary ground has been broken and that the necessary preliminary experience has been had for really good work. I presume that others who have been in this work for several years feel just as I do that we have been traveling through an uncharted wilderness, or perhaps for a true figure I might say we feel that

we have been wading through an unknown slough for fifteen years or more. But in the course of our wading we have found some spots of firm ground. There have been developed certain general principles upon which we may base future work to illustrate what I mean. It is evident now that comprehensive plans for dealing with tuberculosis must rest upon some very accurate diagnosis, presumably the tuberculin test. It is well settled that tuberculosis is not a disease of breed or type, and we know quite well the conditions under which it is disseminated. We know very well that one tuberculin test of an infected herd and one disinfection is not eradication, but only a first step. It is equally clear that we must have a hearty co-operation of owners and the support of public opinion. We know that any radical legislation which proposes to control tuberculosis and which must operate in opposition to general public sentiment is already defeated. Those who really see the problem know thoroughly well that tuberculosis can never be gotten rid of by any process of rapid eradication, for the expense of rapid eradication and the disturbance of animal husbandry and food production which would result stamps such a plan as necessarily hopeless.

We are about ready for a well defined policy for tuberculosis control work on a large scale, something which no state of the Union nor any nation so far as the writer is able to learn has ever had. Two things must go together in this connection: competent organization and a feasible policy with organization as the first essential. If some body of men were able to sit down and formulate a well considered and entirely feasible plan for dealing with tuberculosis and then would lay such a plan before a state which does not have a competent live stock sanitary organization it would to my mind be exactly on a par so far as results are concerned with the offering of bread to a starving man without hands or other means of getting the bread to his mouth. The situation in our country in respect to state organization leaves very much to be desired. In plain English the situation is extremely unsatisfactory—it's bad. A few states of the Union have really good live stock sanitary police organization,

but these states are only few in number and widely scattered. Some states have practically no organization for sanitary control work and a great many of our states have very weak and inefficient political organizations that are hopelessly incapable of doing anything with such a problem as tuberculosis control or hog cholera eradication or glanders eradication. To my mind the work that most of these states have been doing with tuberculosis and glanders has amounted to about as much in a useful way as a boys' game of hide and seek. Perhaps some of our state authorities have been in fact playing hide and seek with owners and cattle in their tuberculosis work.

Difficulties.—There are a great many difficulties in the way of tuberculosis control work which the public in general and especially our profession ought to see clearly. Difficulty number one lies in the direction of public interest and public education or rather in a serious lack of public interest and public education. Good sanitary control work must always be done somewhat in advance of public sentiment and education, but on the other hand it inevitably fails and falls when attempted on lines too far in advance of such public support. In this work of interesting and informing the public concerning bovine tuberculosis we must utilize every possible effective resource. The agricultural press must be used to the limit. Agricultural colleges and secondary agricultural schools, farmers' institutes, and farmers' clubs, all kinds of veterinary associations, demonstrations at public fair and gatherings, all these and more should be utilized vigorously and persistently if we would secure the public interest and support that is absolutely necessary. There is a serious responsibility upon the veterinary profession in this connection. The practicing veterinarian has great opportunities to serve as an educator concerning tuberculosis among domestic animals.

The great difficulty No. 2 lies in the very magnitude of the problem. It is all right to talk glibly about tuberculosis eradication if you are only joking; but the problem is one of appalling magnitude and difficulty to veterinarians who are in a position to see it. In a case like this it is oftentimes a good thing to stop and

take stock and to see where we are at. There are probably about 2,500,000 cattle in the state and it makes no practical difference in this connection whether there are 2,000,000 or 3,000,000, for when two things are both impossible of attainment with present facilities it makes very little difference that one is relatively larger than the other. Practically they are both of the same size. The number of graduate veterinarians now in the state or liable to be here during the next twenty-five years form a ratio with the total number of cattle now or twenty-five years from now that is quite disappointing when one sees it for the first time. The number of veterinarians now in Minnesota or liable to be in Minnesota in twenty-five years from now is simply insignificant as compared with the total number of cattle, the number of herds, and the number of stables. Our whole number of graduates is about 130, and we have about 20,000 cattle for each man. If our 130 graduate veterinarians were to give their whole time exclusively to tuberculin test work and could average three lots of twenty-five each per week in all sections of the state, we could all of us test about one-fifth of the cattle in a solid year—five years to test Minnesota cattle once. Then there are 323 barns in the state for every trained veterinarian, or nearly one barn for every day of the year. Perhaps this illustration may serve to give some appreciation of the problem for the one state of Minnesota.

This brings us face to face with another difficulty. If there are not enough veterinarians in the state who can take care of their other necessary work and then devote enough time to tuberculosis work to make an appreciable showing, the question stares us frankly in the face, "then who is to do the testing?" "How, and when, and where are they to be trained?" It is self evident to any thinking man that there must come something different from the present situation. There are many other complications and difficulties which could properly be discussed in this connection under the heading of magnitude, but I am really making a serious effort to write a short paper this time. For illustration of what I mean by these other complications, let

me call attention to the fact that valuable herds showing a very large percentage of tuberculosis can not be wisely recognized and dealt with in the same way as herds showing very low percentages of tuberculosis. Herds of great value can not be managed and dealt with by the same rules and methods as common cattle.

There is a very great and common difficulty in the shape of dull moral sense, which people are prone to show when dealing with state regulations and with public funds. The tuberculin test can be tricked and so many breeders and dairymen are doing this that it has become a serious complication.

One of the very greatest difficulties is the one I have already referred to as the lack of efficient, well organized, permanent state organization supplied with large funds and with security of permanence in their plan.

I am ready to grant freely that all these difficulties exist and to concede frankly that they are very great difficulties, but on the other hand, I am confident that we may consider this problem hopefully, not as hopeless but as decidedly hopeful.

Conceding all these difficulties and embarrassments, is it not up to the veterinary profession to do very much more than it has done thus far toward correcting the difficulties and removing the embarrassments.

It need not be argued at this time as to whether vigorous control work on a large scale must be undertaken by the state alone or whether the individual states must surrender their police powers to the government in this respect and the work be done by one powerful sanitary authority. It is very evident that abrogation of police powers of the state involves difficult legal complications and it is just as evident that very many states will not for some years to come voluntarily surrender to the general government their police powers of sanitary control work. For many years to come the individual states must do their own internal work with tuberculosis, the federal government having to do mainly with interstate traffic and interstate phases of the problem.

It is evident already that I will not be able to realize my ambition of writing a really short paper and present what I had in mind to say concerning the question of an ideal state organization for live stock sanitary control work, but I may at least give you the conclusion of it, namely, that there are surely rough waters ahead for future state boards, or state organizations whatever that may be, that attempt to do tuberculosis control work in earnest, *i. e.*, work which is really efficient and permanent and which tends to actually eradicate the disease. Such a board must expect virulent political antagonism, must expect antagonism from prominent breeders and even breeders' associations, and must expect difficulties with legislatures, especially when dealing with the finance committee.

In order that ships may not founder in time of storm, they must have great ballast and great floating power and be capable of skillful guidance. I mean by this that our state organizations which are to do effective tuberculosis control work must have all possible backing and foundation and assurance of permanence. Such an organization should have the direct backing and possibly even close organization with state agricultural societies and live stock breeders' associations, agricultural college or experiment station, and state veterinary associations; it must be able to rely upon this backing—this ballast in time of the storm. We had experience in the last legislature which may help some of us to appreciate just what this means. So far our states have only been playing hide and seek with tuberculosis eradication, and considerable antagonism has already been encountered.

In conclusion may I not call attention again to the fact as I believe it, that only very long time plans are worthy of serious consideration in connection with bovine tuberculosis control work; that rapid eradication is hopelessly impossible; that our state live stock sanitary boards can never employ enough field veterinarians to do tuberculosis eradication work; that if every veterinarian in the state could give his whole time to the work, they would still make but little progress toward actual eradication of tuberculosis from our 2,500,000 cattle and 42,000 stables

which we must consider as all infected until we find out otherwise by actual test, and that state remuneration to owners must be regarded as useful, but temporary policy which must be discarded as soon as public sentiment is ready.

Let me call attention in closing to the absolute necessity of large funds and as justification for large funds let us bear in mind that prosperous agriculture is absolutely necessary to permanent national prosperity, and that prosperous animal husbandry is absolutely essential to a permanent and prosperous agriculture. We have no right to be bashful when talking of financial matters in connection with this work. Any work which will control and gradually eradicate tuberculosis must cost a very great deal of money. That is to be taken as a matter of course for permanent work on large scale.

THE West Virginia Veterinary Medical Association at its fifth annual meeting in Clarksburg January 17th framed a bill regulating veterinary practise in that state.

THE annual meeting of the Pennsylvania State Veterinary Medical Association is at hand. Those that have attended meetings of that model state organization know what awaits them in Philadelphia on the 7th and 8th. All who can possibly reach there from without as well as from within the state should do so.

SECRETARY MARSHALL of the A. V. M. A. states in a recent communication that in working up a program for the coming meeting, new tactics have been adopted, which he believes will work out satisfactorily. The plan is as follows: There are to be eight divisions: Pharmacy and Materia Medica, in charge of Dr. E. L. Quitman; Surgery, Dr. L. A. Merillat; Practice, Dr. S. Stewart; Pathology, Dr. J. R. Mohler; Bacteriology, Dr. Veranus A. Moore; Meat and Milk Inspection, Dr. L. A. Klein; Veterinary Sanitary Police Measures, Dr. J. G. Rutherford. Each of these men is to select papers, discussions, etc., and to take entire charge of all the material that will be presented at the meeting next August. It is recommended that the men in charge of each division read the papers before they are presented at the annual meeting, so that good material will be assured.

RETROSPECTION AND PROSPECTION OF THE VETERINARY PROFESSION IN MAINE.*

By H. L. STEVENS, D.V.S., ROCKLAND, ME.

When I was reminded that I was expected to present a paper at this meeting, I was at a loss to know what to select for a subject, even after I had thought of some things I wished to say, I still wanted an appropriate title. Finally I decided upon "Retrospection and Prospecton of the Veterinary Profession in the State of Maine, or Some Things the Profession Has Accomplished, and Some Needs of the Profession and to What Extent Do These Needs Coincide With Those of the Public?"

I shall not pretend to cover the subject in detail. Indeed it is too broad a subject to be exhausted in the brief time allotted to a paper on an occasion like this, even if the writer were capable of doing so.

In the first place we need to remember that no sect or class of men can succeed or prosper to any considerable extent unless they have proper respect for one another, and work together harmoniously; and since we are dependent upon the public for our livelihood, it is especially important that we individually and as a profession merit and receive the confidence, respect and support of the public.

Not so very many years ago our work was done by the farmer, the blacksmith or the stableman, and whenever a man claimed to make his living by being a horse or cow doctor exclusively, or in other words, the professional, in those days, it was often the case that such a person was as low a specimen of humanity as walked upon two legs. He could often neither read nor write.

The old casting rope, without so much as leather straps for

* Presented at the October, 1910, meeting of the Maine Veterinary Medical Association.

the pasterns, the pocket jack-knife, the searing iron, and the long necker constituted the old timer's armamentarium. I well remember the first colt I ever saw castrated. It was when I was a small boy. It was done by a person of more than ordinary importance. He was a farmer residing at the foot of Mt. Blue. He served his community and town as human dentist, castrator of large animals, deputy sheriff, and director of the church choir. On this occasion he drove a distance of five miles to castrate a two-year-old colt and received the magnificent sum of 75c. for his services. On another occasion, the same owner had a more valuable three-year-old colt to be castrated, and as he wanted to be sure of a good job, took the colt to an adjoining town, a distance of five miles and obtained the services of an expert, who used the same methods as the former, but charged the enormous fee of \$1.50.

Those men had no knowledge of pathology, nor of the action of the drugs. Their principal remedies were to replace the "lost cud" with a new one of poplar bark, to bore the horn and fill with some magical agent for "horn ail," and to cut off the end of the tail for "tail sickness," in cattle, and the unfortunate horse was bled, purged or rowelled for every ailment, and even to-day I know of successful farmers who believe in such folly. But such fallacies are fast giving way to the more modern scientific truths.

Such were the conditions at the time the graduated veterinarian made his appearance in our state, and the only wonder is that with their limited knowledge and equipments those men were able to do as well as they did.

When the graduated veterinarian appeared upon the stage of action, he was looked upon with mingled curiosity, awe and suspicion. At the time a certain early graduate located in practice in this state, a well-to-do and progressive (?) farmer remarked that he would not have him in his barn, for he said, "those college chaps know what to carry round to make cattle sick." Then also when the graduate charged living prices for his services, it was thought he was robbing the people.

So the early veterinarian had to overcome the prejudices, suspicions and superstitions of the public, and to educate the layman to realize the fact that the qualified veterinarian had qualifications, and could do work superior to his uneducated competitor.

Since those days the graduate veterinarians of our state have gradually been making progress, both in the quality of their work and in the estimation of the public. While he has often in the past and is sometimes at the present time dubbed as "hoss" or "cow doctor," he is steadily coming to the front, and let us trust the time is not far distant when the profession will assume its rightful place among the professions and in society.

It is true that people admire honesty and sincerity of purpose in others; and the sooner we approach a high standard of manhood and honesty the sooner shall we be honored by the communities in which we live.

When we stop to compare for a moment, the equipment of the old time quack with that of the up-to-date veterinarian, we can realize something of the progress that has been made by our profession in the last twenty-five years. We have to-day surgical and obstetrical instruments galore, their numbers limited only by the size of the practitioner's pocket book; our professional libraries are much more complete than in the days of the early graduate, our therapeutic agents have multiplied in numbers and increased in efficiency, until to-day the up-to-date veterinarian who cares for accuracy of dosage and certainty of results can carry in a small hand case filled with the modern active-principle remedies, more therapeutic dynamia than could formerly be carried in a Saratoga trunk, to say nothing of the sero-therapy, which to-day is only in its infancy, and for which there are doubtless great possibilities in store; with which we will be better acquainted in the no distant future. These things have been placed within our reach by the greater lights of the profession, and it is for us, the rank and file of the profession to use them not only to our own benefit, but in a much larger degree to the benefit of our clients.

While the laity may not realize and appreciate the valuable services of the profession, they nevertheless owe them much gratitude, simply from a financial point of view, to say nothing of the relief they have been able to give the suffering dumb animals. For instance, in the one disease of parturient paresis, the modern treatment, which has without doubt saved the stock owners of Maine enough to pay the entire fees of the veterinarians of the state for their services to cattle since the treatment came into general use, and yet how few even of we veterinarians, when we are treating a case of milk fever, think to give a thought of appreciation to Herr Schmidt for his wonderful discovery much less does the layman or the quack who makes use of it, give credit where credit belongs.

As a single illustration of the progress made in the knowledge of diseases, I quote from a medical work published in 1889. The author says: "The most plausible theory in regard to them," meaning the tubercles of consumption, "is that they are the result of imperfect nutrition. Such a subsistence cannot be produced by the blood when it is perfectly formed. It is an unorganized particle of matter resulting from imperfect elaboration of the products of digestion which is not properly fitted for assimilation with the tissues. "The causes are numerous and varied and classed under two heads: predisposing and exciting. The exciting ones are those capable of arousing the predisposed ones into activity, as spermatorrhea, dyspepsia, nasal catarrh," and the author continues by naming thirty or more others of a similar nature.

We are all familiar to-day with the true nature and causes of this and the great majority of other diseases now affecting animal life. And for this knowledge we should not neglect to honor our experimentors in the veterinary profession as well as in our sister profession, the M. D.'s who are snatching the torch-light of truth from Pasteur and Koch and bearing it onward for the benefit of the suffering man and beast.

I believe we should each one feel a certain amount of pride in the fact that the veterinary profession has and is to-day taking

the lead in discovering the causes and nature of the diseases of the lower animals and in establishing their true relations to those afflicting mankind; and while this work is of untold value to the public even while being carried on, certainly no man living can conceive of the benefit which it will surely bring to unborn generations and to unborn nations.

At an early date in the history of the veterinary profession in the state of Maine, some of the faithful banded themselves together into an organization called the Maine Veterinary Medical Association. This was probably the most important event in the history of the veterinary profession of the state up to the present time.

The object of the association as set forth in Article II. of the constitution is "to be the advancement among its members of a true knowledge of all subjects pertaining to the veterinary science." To this should have been added "and to cultivate a spirit of true fellowship and fraternal relationship among its members, and to secure needed legislation for the mutual benefit of the profession and the public. To these principles the members have been true. Especially to secure needed legislation did the members of this association labor most earnestly and persistently. They freely gave of their time, their money and their talents.

Laws for the control of infectious diseases among cattle and horses have been enacted, milk inspection has been provided, and at the last session of the legislature provision was made for the application of bovo-vaccine, and also an appropriation was made to extend the work of tuberculin testing of cattle, supposedly free to the farmer; but as this was left to the judgment of the board of cattle commissioners, their judgment has not been, so far as I have been able to learn to test many herds free of charge when the work was done by a veterinarian. While this bill was being agitated, it was thought it would give more work to the veterinarian, and thus be to his benefit, but on the contrary it has been to the advantage of the cattle commissioners them-

selves in giving them more work for which they receive daily wages from the state.

And right here let me call your attention to the ruling of the cattle commissioners that they are not to accept a diagnosis on suspected tuberculous cattle with less than three readings of temperature subsequent to injection. But as a matter of fact they themselves, being farmers, diagnose with only two readings, and even make diagnoses on glanders in horses and tuberculosis in cattle on physical examinations.

After repeated attempts and failures, the association succeeded in securing the passage of a practice law. This law while not perfect was without doubt the best that could be obtained at the time, and while it was ostensibly to benefit the graduate, it has proved a great benefit to the quack, in fact next thing to a diploma for those who had ever doctored a sick animal for pay before the passage of the bill. He has passed his examination before the state board, and the state says he is qualified and who shall say he is not?

But let us not despair, for although this law has thus far benefited the graduate very little if any except to give lucrative (?) employment to three of our worthy members, it will if retained upon our statute books result in benefit to the profession of succeeding generations.

These are some of the things the profession has accomplished by the consent of the people.

Let us now briefly consider a few of the urgent needs of the profession, and let me preface these suggestions by saying, and with emphasis, that each one of them is needed by the public even more than it is needed by the profession.

First of all our practice law needs to be revised to the extent that all quacks shall be obliged to state upon their advertising matter the fact that they are non-graduates, for at the present time many quacks are doing considerable advertising and by ingenious wording the unposted layman does not know but what they are graduates. This is only a protection which the

graduate should demand in justice to himself, and the public should demand it for its protection.

We need to charge a fair and adequate price for our professional knowledge and services. I believe it unprofessional and unbusinesslike to cut our prices to get a certain job from a cheap-priced quack, just for the sake of getting the work. Cutting of prices is not conducive to self respect, nor will it aid us in obtaining the respect of the public. In fact, I believe nothing will injure a man's business and his reputation among his clients so much as having "a price for everybody," especially on the same class of work. We need to have more good words for our brother veterinarians. How can we expect the public to have respect for us as a profession if we have not respect and confidence in one another. We can never make a practice and reputation for ourselves by trying to put down our brother competitor.

We need a revision of our milk inspection law. Even the laymen realize that we are attacking the problem of pure milk at the wrong end. Instead of making an analysis of an occasional sample of milk, and calling the work complete, the work should begin at the source of the supply. Given good healthy cows, in clean sanitary quarters, healthy and neat attainments with approved methods of handling the product, there will be little need of adulterating milk; and with the work under the direction of competent veterinarians a pure milk supply would be an accomplished fact.

We need a change in the administration of our laws relating to contagious diseases of domestic animals. We have a fairly good law, but there can be improvements in its administration. The examination and testing of cattle and horses should be left exclusively to the graduate veterinarian.

One of the greatest needs at the present time is a law providing for meat inspection. Our farmers need meat inspection to increase the demand for home raised beef, for at the present many consumers of meat demand western beef because it has passed inspection. The public needs it for its own protection against unscrupulous dealers. I have been told of instances of

local meat men buying cows at \$2.00 on the foot for their local beef supply. If the people could know of the emaciated and even diseased animals which are sold for human food they would rise *en masse* and demand suitable laws to regulate the sale of meat and meat food products. The honest dealer also needs meat inspection for his protection against the unscrupulous dealers.

We need an extension of our state laboratory at Augusta so that more bacteriological work may be done. We should have some place, and the state laboratory at Augusta seems the most suitable, where pathological specimens may be examined for aid in diagnosing diseases. I have several times sent specimens there for examination and word always comes back "we are not equipped to do tissue work."

Few veterinarians care to go to the expense of fitting up a private laboratory for microscopical work, and still fewer who have the means, have the time to devote to that work. Hence it is to the best interests of the state that such work be maintained at the expense of the state.

These are a few of the present and future needs of the profession, and you will all agree with me that they are needed by the public, for we are the servants of the public, and what will benefit us and make us more proficient in our work, must also benefit the people whose servants we are.

These needs should be demanded by the public, and they will be as soon as the people can be educated to see their needs. So then it is up to us as a profession to try to educate the public to realize the necessity for these improvements. How shall we do it is the great question to be solved. One way is as in the past, go to the legislature with our wants. People are eager to know what is going on there and will read whatever can be said for and against measures presented before that body.

Now that our next legislature will be of a different complexion from that formerly, is not this the opportune time to strike for a part or all of these improvements. Since the personnel of our cattle commissioners will most certainly be changed,

it seems as if now is the time to work for some improvements in that line at least.

As a synopsis of the system I would like to see inaugurated in this state I would suggest the following.

In the first place I would abolish our present board of health, our present system of milk inspection and the board of cattle commission.

I would place the administration of these various departments under the control of one board known as the Maine State Sanitary Board, or Department of Health. In addition to the duties performed by these bodies at present, I would add that of meat inspection.

Let this board be composed of one M.D., one veterinarian and one farmer, preferably a graduate of some standard college of agriculture. Let this board have charge of the work and be responsible to the state for the performance of the duties pertaining to this work which properly comes under one department.

For the purpose of meat and milk inspection let the state be divided into convenient districts with a qualified veterinarian in charge of the work in each district, and the whole state under an Inspector in Chief. Let these men devote their whole time to the work in their several districts and receive a suitable salary for their services. Let each district be large enough to require all of a man's time. I would recommend that all samples of milk to be analyzed be sent to the State laboratory by the inspector in charge, there to be tested. You would thus get uniform and reliable tests of samples from all over the state.

The details of such a sweeping bill would require considerable time to be worked out, but I believe this association should awaken to its opportunities and when the next legislature assembles, have something tangible and practical to ask of our new law makers.

DR. P. H. BROWNING, San Jose, California, says briefly in renewing his subscription: "I love my three dollars, but Oh, you REVIEW!"

TRAINING HORSES.*

By F. C. GRENSIDE, V.S., GUELPH, CANADA.

This, the subject of my paper, chosen by the committee, is a comprehensive one, as it would, if taken literally, include training for speed; but as I take it in a gathering of this sort, such an inclusion would be out of place. Leaving out the question of speed, it is still a large order, so that I can only touch upon some of the principles, which should guide us in the education of the horse, and incidentally refer to some of the more important details in carrying them out.

The old term of breaking, used synonymously with training and education of horses, is in a measure objectionable, as it appears to indicate the exercise of too great a degree of force in the process of training. Although harsh measures may be necessary under some circumstances, the guiding principles should be, rather a leading of the colt into compliance with our wills by artifice rather than by force.

Some trainers approach the task in an aggressive mood, prepared and expecting to use harsh measures, while others, and, we think the more successful ones, endeavor to accomplish their object by the exercise of strategy and only resorting to force when absolutely necessary.

Another fundamental principle that should guide us in the training of a colt, is to never place the animal in a position to do wrong, for if he succeeds in acting in opposition to the will of his trainer he is apt to repeat the act, if an opportunity is afforded. As tending to illustrate the carrying out of the principles so far enunciated, let us take the example of a shy, nervous, high spirited horse, easily frightened, and inclined to turn around sharply, to shy badly, and rear or plunge, if restrained.

* Presented at the Ottawa, Canada, Winter Fair.

It is courting disaster to subject such an animal to conditions calculated to frighten him until his mouth is made so that you can control him. He should also have the sharp edge taken off his spirits, by sufficient work in a quiet place, and he should be hitched alongside of a tractable, well trained horse to give him confidence, and assist in controlling him when he is first subjected to sights and sounds likely to disturb him. Every time he is hitched with such a horse his side should be changed, so as to teach him to go, and carry his head straight and get used to the pole on either side of him. Such treatment will soon get him ready for single hitching, without delay.

Never hitch a colt single without the use of a kicking strap, until he has a few weeks' experience, for if he once kicks successfully, he will not forget it. Do not tie up a colt in a place where he can pull back and become a halter puller. Tie him with a strong halter and tie rope and with something to back against so he can't pull back.

These are a few simple examples of the manner in which training can be carried out, upon the principles enunciated. It is much more trouble, and not nearly so satisfactory to have to try and correct faults than it is to avoid their development. The exercise of force is sometimes valuable in nervous, headstrong horses, but never try it unless you are sure of being able to attain your ends. For instance, some horses are very nervous about being saddled and could easily be taught to be buckers. This tendency is not vice, it is nervousness, and by putting a twitch on for ten minutes while saddling and putting a man on the back and leading about with the twitch, the nervousness can be overcome, while such horses get used to the pressure on the back. I have seen this plan save a lot of trouble and avoid bad habits being learned.

It is not necessary to go into any more details, in illustrating the principles laid down, for they have to be left to the common sense, judgment and aptitude of those who do the handling.

We now come to an extremely important point, in the education of a colt, but it is one very imperfectly understood, and

one in connection with which great errors are made, much suffering caused and results in the failure in the attainment of which leads to loss and disappointment. I refer to biting, or the cultivation of the mouth. This organ can undoubtedly be considered as exercising the most important influence in contributing to the control of the horse.

It is not only, however, in influencing control that it exercises its very important function, but also in balancing the horse, in steadyng him, in promoting a graceful carriage of the head and neck, in increasing action and in regulating speed. In order that we can attain all these things through the medium of the mouth, that organ has got to be cultivated until it becomes responsive. By a responsive mouth is meant one that readily yields to the pressure of the bit brought about by the tension of the reins in the hands of the rider or driver.

The mouth responds, whether the pressure is intended to restrain, guide, steady, collect, or alter the carriage of head and neck.

The cultivation of the mouth being of such prime importance in contributing to the reliability, comfort in using, style, speed, balance and action of a horse, it behooves the trainer to give it special attention, in handling a colt, and remember that in the process of biting, it is easily spoiled, and that defects of it are hard to remedy.

There is a marked analogy between teaching a child to write and making a colt's mouth. In both instances you are cultivating muscles and nerves. In one case you are teaching the muscles and nerves of the hand and arm to make smooth lines easily in forming letters; in the other you are educating the muscles and nerves of the head and neck to respond to pressure. Both processes take time, and repeated practice, and the mistake many handlers of horses make is that there is no systematic plan of carrying out the training of the mouth. The bit is usually put in the mouth, and the colt driven before he understands anything about pressure from it, and what it means.

By following out this lack of method many bad habits may result, particularly in sensitive, nervous horses, who readily chafe under any discomfort.

The experience of repeated irritation in connection with the mouth, leads to such bad habits as putting the tongue over the bit, tongue lolling, drawing the tongue up in the mouth, going with the mouth open, crossing the jaws, side lining, pulling, unsteady carriage of the head carrying the head too high or too low, going corner-wise carrying the head sideways, hitching, interfering, mixing the gait, rearing, plunging and running away.

In order that we can make a horse's mouth responsive and steady, it is necessary to get the tongue to stand a reasonable amount of pressure from the bit, as this organ protects the bars of the lower jaw from undue pressure and injury.

In cultivating the mouth the first step is to simply put a bit in it for a few days, to get it used to its presence, then by slow degrees exert increasing pressure on the tongue by the use of reins buckled to the bit, and then buckled back, on either side, to a surcingle. The mistake is frequently made of having these reins too short at first, and thereby exerting too much pressure on the tongue before it becomes inured to it. The reins at first should be only sufficiently tight, so that when the colt holds its head in its natural position the slightest amount of pressure is brought to bear on the tongue but when he sticks his nose out he feels the increased pressure, and the restraining influence of the bit, and he yields to it. Constant repetition of this results in frequent yielding, thus cultivating responsiveness, and at the same time habituating the tongue to pressure. Every day or so the reins can be shortened slightly, thus increasing the pressure by slow degrees, but never sufficiently to tire the nerves and muscles, so that the colt will fight it or hang on it. If he drops his head too low, use a bearing rein, in addition to the other reins, and use a separate bit for the bearing rein.

A couple of weeks of this sort of treatment in a box stall will be a good start in making the mouth responsive. Leading the colt about or lunging him with the biting tackle on will still

further promote the education of the mouth, but you cannot finish the making of the mouth in this way, it has to be done in harness, or in the saddle. A great deal depends upon the delicacy of touch of the driver or rider of a colt, as to the progress the mouth makes in responsiveness. The hand should be light, but steady, the mouth should always be felt, and the colt kept collected, as well as the progress of his education will permit. Loose rein drivers are an abomination, as they teach the mouth nothing, and are apt to spoil a horse's gait. Hitching, forging and bad carriage are promoted by loose rein drivers.

The position of the bit in the mouth is of much moment. It should not be too high or too low, and the trainer has to be guided by the manner in which a horse faces it, in determining its proper location. If the mouth does not yield to the pressure of the bit, lower it, and put it down as low as possible, in order that the animal will still face it with a reasonable degree of firmness and not put his tongue over it. If he shows evidence of doing this and keeps "behind the bit," raise it. Much harm is done by the very common practice of placing the bit too high in the mouth. When it is too high leverage is lost, and you cannot bend the head upon the neck, and get response from pressure. Other untoward results are that the lips are curled up and the angles of the mouth made frequently sore, and the cheeks are pressed against the anterior grinders, causing abrasions and excoriations of the lining of the cheek. Lungers, side-liners, tongue lollers, open mouths, sore mouths, dry mouths, crossed jaws are encouraged by having the bit too high in the mouth.

Another important point in training is giving steady work. Leaving an interval of two or three days between lessons is a very bad plan as the sharp edge has to be kept off a horse's spirits to keep him teachable. A colt never learns anything but bad habits when he is suffering from exuberance of spirits. Give him a lesson in some way every day, and two lessons a day are better than one. It is not necessary to jade a colt, but keep him steadily at it. Two lessons of half an hour are better than one of an hour's duration.

Try to avoid making the mouth sore by using suitable bits in a rational way. As soon as the mouth becomes sore no progress is made. It is better to leave the bit out of the mouth for a few days and lunge the colt to keep him from getting too high spirited.

Before closing I wish to urge exhibitors of horses to get their colts trained to lead well before putting them in the show ring in classes in which they have to be shown on the rein.

It is very annoying and embarrassing to judges to have to pass upon colts that cannot show the character of their action on account of awkwardness in leading and it often militates against their success. It is apparent to observers of awkward exhibitions of leading in a show ring that the handler of the colt often needs as much training as his charge.

Ten or fifteen minutes spent daily for ten days in leading lessons will usually get a colt to go handily.

For ordinary purposes it is not necessary to use a long rein of the expert nagsman as when showing the Hackney, but the rein may be held about a foot from the head, and loosely, but just nagging sufficiently to keep the head in position and regulate the pace.

The leader should run along and avoid looking at his charge, for if he looks at him he will go sideways, if possible, or not lead up. The off side of the horse should be along side of a wall or fence, to make him go straight; a lane is a good place, as the off side can be kept towards the fence going both ways.

A run of fifty to seventy-five yards is ample and a man should be at either end to stir the colt up with a whip, so as to lead up freely. If nobody is available for the purpose, the nagsman can carry a long, straight whip in his left hand, with the point of it directed towards the hocks.

SAN FRANCISCO has won the Panama Exposition by a very large majority; the votes being 259 to 43; which means that the Panama Exposition will be held there in 1915, and "goodness knows" what else!

TEXAS TICK FEVER AND BRAHMA CATTLE.*

By L. J. HERRING, B.Sc., D.V.S., GEORGIA EXPERIMENT STATION,
EXPERIMENT, GA.

This is a rather old subject, just as Hog Cholera in the way of discussions was, but there were some who felt it still new, and continued to work on it. Drs. Dorset and Niles continued studying the question and decided it was not caused by *B. cholera suis*, and thought hog cholera and swine plague were the same or that swine plague was a complication of hog cholera. This, they proved to their satisfaction. Their results were valuable, as you well know. It was proved that they are caused by a filterable virus, and that hog cholera can be prevented if treated in time with the serum treatment. The results of such treatment is well known. These facts only illustrate why I am discussing this old subject.

One thing is sure, Tick Fever is still with us and is just as deadly as ever to the live stock of the South. By knowing the weak points in the life history of the ticks, ways have been found how to fight them. It has also been proven that no drug or combination of drugs will materially lessen the mortality of the dreaded disease. Have we given up hopes? Is it possible to eradicate the ticks from the South soon? I answer no to both questions. This I will modify, by saying just in proportion to the interest taken by cattle growers, and to their progress in education along live stock and educational advancement, will the ticks be eradicated, especially in the non-stock law districts. The lack of education and interest, are not the only barriers, the long summers and lack of cold enough weather to destroy young ticks, which make good environments for the tick to survive under are great natural ones. For these reasons we must not give up hopes of some day finding a specific for piroplasmosis bovis. However the ticks must eventually be eradicated.

Now let us look at some of the recent advancement along the line of treating syphilis, sleeping sickness and canine piro-

* Presented at the Georgia State Veterinary Medical Association, December, 1910.

plasmosis. These diseases are caused by an animal micro-organism, so is hemoglobinuria. Prof. Paul Ehrlich has found, after diligent work, a specific for syphilis; for short he calls it "606"; the chemical name is dioxydiamido-arsenobenzol. He also found one for sleeping sickness; had he given up hopes, these never could have been found; I mean so soon, for some one equally as persistent would have done so. The results are not hearsay, they are reported. Pick, a German, treated 120 cases of syphilis, and only two recurred. Isaac treated 27 cases, none recurred, but all were bad to start with. Kroymer treated 17 cases, 5 recurred and 3 others were some time reacting to the treatment. Herxheimer and Schonnefield treated over 200 cases with but one recurrence. Reports taken from *A. J. of M. Science*, December, 1910. The success following treatment of sleeping sickness is as sure or more so than syphilis. He calls the specific for sleeping sickness "418," or arseno-phenyl-glycin. Treatment of canine piroplasmosis has yielded good results, with trypanblau in Dr. Geo. H. F. Nuttall's work, of Cambridge, England.

With these facts in view, surely there is a great field for some one to find a specific for piroplasmosis bovis. Dr. Geo. H. F. Nuttall and S. Hadwen, of the University of Cambridge, have been experimenting on cattle affected with Tick Fever, the results are wonderful. All the cases they treated, they made the cattle sick by inoculating them with blood from an animal that had recovered from the fever. They obtained typical hemoglobinuria symptoms. They used nine cows, four were used for controls and five for treatment in this experiment. One of the four controls died and the other three had hemoglobinuria.

Trypanblau was used for treatment. It is a deep blue stain slightly soluble in water. A saturated distilled water solution is made, and injected into the jugular vein, from 130 to 200 c. c. at a time. One injection should be enough. It is better to inject it in the jugular as it gives better results; however, it can be injected subcutaneously and more must be used. If small amounts are injected, the germ becomes seemingly immune to the drug, and will not react to its curative effect.

The cows treated were numbered 1 to 5 inclusively. Each cow was inoculated with 30 c. c. of virulent blood from an immune cow, except No. 5, which received 200 c. c., subsequently receiving 30 c. c. more virulent blood from a cow that had just died. These cows reacted to the inoculations quickly except No. 5, which seemed resistant. No. 1 on the fifth day received 200 c. c. of saturated solution of trypanblau in jugular vein; No. 2 on the sixth day 130 c. c.; No. 3 on seventh day 150 c. c.; No. 4 on seventh day 150 c. c.; No. 5 on twentieth day 180 c. c. In each case the temperature at time of treatment was from 105 to 107 degrees and parasites were found in the blood. All cows treated got well. No. 4 was killed on the twenty-third day when temperature was normal and cow doing well, no parasites were found in smears from spleen, kidney or liver; the subcutaneous tissues were stained blue.

The temperature went down soon after the injection of the stain. Hemoglobinuria occurred in each case.

The results of Dr. S. Dodd's work on "Redwater" at Brisbane, Queensland, Australia, are convincing. The following is a summary of his results.

He first used trypanred, as that was all he had at that time, on four cows, using one as a control. In each case he injected 45 c. c. of defibrinated virulent blood which produced a severe case of the disease. He treated the animals by injecting 100 c. c. of the saturated solution of trypanred (2 grms. to the 100 c. c.). Two of the three treated and the one control died of redwater. By February the second, 1910, trypanblau came and a new series of animals were put in. Experiment No. 1, five cows were used, all were inoculated with 60 c. c. of virulent blood, three were treated and two were left for controls. One of the treated and the two controls died. The treatment was not used until the animals were sick enough for an owner to notice it, as Dr. Dodd is trying to make the treatment practical. Experiment No. 2—About the same time three pure bred Devon bulls were sent to Queensland from England, for breeding purposes. They were inoculated in the usual way, by injecting them with 5 c. c. of viru-

lent blood and taking care of them in the old way; two of them became so sick that death was feared; trypanblau was used subcutaneously on all three. You note he did not inject them intrajugularly. All got well, but Dr. Dodd thinks two of them would have died had it not been for trypanblau. Later, Experiment No. 3.—Seven more cows were inoculated with 50 c. c. of virulent blood each; trypanblau was used on all but one as a curative, which seemed not to have needed it, all got well. Experiment No. 4—Eight more were inoculated in the same manner three times, as it did not take so well, but the reaction did not warrant the use of the drug. He accounts for this by the fact that these (Experiments 3 and 4) fifteen cattle were bought of an owner who said they had never had any ticks on them, but had been infected at a time when the owner did not know it.

The conclusion is that trypanblau is a very efficient remedy for tick fever, but must be tried out and perfected by experiments, until it proves practical and convenient in the field. There is a great future for it. Since such work has been done so successfully in England and Australia, I think it can be done here in Georgia or elsewhere, if ticks exist. I am going to try it out fully at the Georgia station. Those who want to eradicate the tick may try to discourage me, but the treatment must be worked out if possible. I want to see the ticks eradicated, and believe that will be the final solution of the question. Ticks must be eradicated. Aid must be given those, if possible, who cannot get rid of the ticks in many years to come. Such localities as South Georgia and Florida are good examples, especially where there is no stock law.

I have done some work here with trypanblau as a curative agent, but on account of not using large enough doses, good results were not gotten. My work proves that small doses repeated often will not accomplish any thing.

THE BRAHMA CATTLE.

The Brahma cattle have been before the public for some time, as cattle immune to tick fever, by hearsay. It seems that they

have not been fully understood. The occasion presented itself to me, to visit a ranch in Texas where pure bred zebus were imported from India. The ranch I visited is the T. H. Pierce Estate, at Pierce, Texas, controlled by Mr. A. P. Borden, who went to India to get the cattle, with the permission of Secretary Wilson of the Department of Agriculture, that he could import them subject to the quarantine regulations. After much difficulty in getting the cattle by the quarantine at New York, he landed one-half the number he started with (the other half having been killed by inspectors) at Pierce, Texas, in the fall of 1906.

The Brahma cattle are not immune to Texas tick fever or at least I do not think they are. It is true that very few, if any, ticks at all come to maturity on them. This is the big claim for them in regards to ticks. Where there is $1/16$ Brahma blood in the cattle the same is true. I am convinced from what I saw that this is true. On this ranch there are thousands of grades and some pure bred Brahmans and native cattle. All the cattle with Brahma blood in them were in better condition, carried less young ticks and were more active than native cattle. They also stand the tropical and semi-tropical pest and diseases better than native cattle. The pure-bred Brahma bulls are crossed on native pure-bred beef cattle.

These points are not the only ones in favor of them. Mr. Borden is in the cattle business for the money, and he would not be getting zebus from India at his own expense, if they were not money makers. He had some grades before the recent importation, consequently he was not making a leap in the dark. I think these cattle are good for South Georgia and Florida, especially for beef purposes when crossed on native beef breeds. They give a fair amount of milk, enough for farm use, but not enough for dairying. My work with grade Brahmans shows they are tick resistant in as much as ticks do not come to maturity on them.

This line of work is of particular interest in the South.

RHEUMATISM.*

BY I. L. SALLY, D.V.S., SKOWHEGAN, ME.*

I selected this subject, not because of what we know about it, but rather because of the little that appears to be known as to the actual cause of this disease. The history is not important; suffice it to say that it probably has been known as long as any disease and is as old as the animal kingdom itself.

Divisions.—Rheumatism may be divided into acute, muscular and articular; and these may each become chronic, but I shall treat principally of the acute form.

Etiology.—Rheumatism is particularly frequent in the equine, bovine and canine species. It is favored by cold and dampness, cold winds and draughts, badly kept stables, damp pastures, sudden chills of the over-heated body, very cold baths, etc.

Little exercise and heavy feeding as well as over-fatness predispose animals to rheumatism. When we come to consider the actual causes we find various opinions.

Dr. Gresswell says rheumatism is a general disease, the proximate cause of which has been maintained to be a poisonous substance circulating in the blood; this poison is stated to be lactic acid or some other acid. No excess, however of any such acid has yet been detected in the blood.

From Dr. Zuill translations of Friedberger and Frohners we have the following: "At the present day it is no longer possible to consider the suppression of the cutaneous perspiration—a consequence of cold as the cause. This has been said, by its arresting the elimination of the products of tissue waste, to result in a dyscrasia, ultimately producing inflammation of the muscles. The hypothesis of an increase of the lactic acid production is no more

* Presented at the October, 1910, meeting of the Maine Veterinary Medical Association.

to be maintained than the preceding theory. Experimental suppression of the cutaneous function by varnishing, and the artificial introduction of lactic acid into the muscles have never produced rheumatism. They further say that articular rheumatism is probably caused by an infection both in our animals and in man and that cold intervenes as an occasional cause.

Dr Alexander Hague in his investigations upon uric acid as the cause of disease in man says, "I have found not only that an attack of gout and rheumatism can be produced by giving acid, but that all substances, which increases the solubility of uric acid increases its excretion in the urine and do good in those joint troubles which are due to its irritating presence, while conversely all substances which diminish the solubility of uric acid diminishes its excretions in the urine and also increases those irritations in joints and other fibrous structures which are due to its presence."

Dr. Galon a early as the latter half of second century was of the opinion that rheumatism was caused by the accumulation of matter in the parts affected. These matters were supposed to be phlegm, bile, blood, or a mixture of these fluids.

Dr. Hague found that excess of uric acid in the blood and body are almost never due to increased formation but to failure of excretion or retention; also that alkalies increase and acids diminish the excretions. Uric acid excreted by the urine comes from two sources; the uric acid formed in the body out of nitrogenous food and uric acid introduced into the body in meat extracts, soup, tea, coffee, etc.

Dr. I. M. Shepherd, of St. Francis Hospital, says acute rheumatism is an infectious constitutional disease possessing the peculiarity of manifesting its marked processes locally in the fibrous and serous structures of the motor apparatus engaged in facilitating active movement. Equally characteristic of the effects of this rheumatic poison is first, its irritation of the muscle to the production of an excessive formation of lactic acid in the system—a condition which does not happen in any other disease.

Second—The pronounced increased deposits of urates in the urine, and

Third—The absence of uric acid in the blood.

The striking resemblance of an attack of acute rheumatic synovitis to a scarlatinal synovitis, and of an acute rheumatoid arthritis to a pyemic arthritis suggests a similarity of cause—bacterial infection. The joint inflammation of a pyemic infection is abridged by speedy death. When the inflammation is allowed to proceed it leads to suppuration. The tendency of all inflammatory swellings caused by an infection arising from without the system is to suppurate.

The rarity of suppuration from an inflammatory swelling from acute rheumatism suggests a bacterial infection from within the body.

Dr. Shepherd also says that the blood does not contain any uric acid during the period of the infection and prior to the crisis of acute rheumatism.

Considering these facts it is my opinion that acute rheumatism is an auto-bacterial infection that starts in that process of retrograde metamorphosis involved in the formation of uric acid.

Dr. Dacosta says in a few instances we find acute arteritis arising and especially inflammation of the fibrous structure of the aorta.

So, gentlemen, you see opinions differ so much as to the actual cause of this disease that it is very little we really know about it. But may not the facts be that all are partly right in what they think the cause to be. May it not be caused by uric acid in the system as many think; and the infection or whatever else might produce a rise of temperature, influence either the production or the excretion of uric acid and possibly both. It seems to me it is reasonable to suppose this theory may be the correct one.

Pathological Anatomy.—In muscular rheumatism there is no alteration in benign cases; in more serious cases we observe all the symptoms of myositis, hyperemia, hemorrhage, a serum exudate in the interstitial connective tissue, softening, discoloration, and segmentation of the muscular fibres.

In articular rheumatism the principal alteration is serous synovitis; purulent synovitis is only found in exceptional cases.

The synovial membrane is red, hemorrhagic, are thickened, tumefied, and strewn with turgescent villi, which are of a dark red color. The synovia is increased in quantity, the cartilages are of a rose tint at the beginning, later they become yellowish; their surface is velvety.

Symptoms.—In the horse the symptoms are ordinarily located in certain muscular groups, most commonly those of the extremities. The limb is extended, held stiff; the affected muscles sensitive, tumefied and hard.

One of the characteristic symptoms of rheumatism is its migratory character, which passes abruptly from one member to another; or from one joint to another.

We must not rely too much, however, on this in our diagnosis for this symptom is sometimes absent.

In articular rheumatism we have the inflammation about the joints. Tumefaction is very common; this usually appears abruptly, sometimes in one night they acquire great size. They are most often in several articulations, most commonly the knee, hock, or stifle joint.

Treatment.—The treatment of this disease varies as much as its etiology. Hot applications are safe and they surely give some relief in muscular rheumatism. Stimulating frictions may be used with benefit, but in this case probably the massage has more to do with it.

Protection from cold, dampness, and drafts are important. If the disease has become chronic, vesicants may be of advantage. Iodine, cantharides, biniodide ointment, etc.

In man considerable relief has been obtained by paradise seed in alcohol, well rubbed in.

As for internal treatment something to aid the elimination of the uric acid seems to be the proper thing. Salicylic acid, salicylate of soda, salol, antipyrine, etc. A good diuretic and physic ball are good treatments.

DISEASES OF YOUNG ANIMALS.*

BY DR. THOS. FARMER, GRAND BLANC, MICH.

This paper is more of an inquisitive than instructive nature. I do not think in all the time that I have attended these meetings which must be in the neighborhood of seven or eight years, have I ever heard the diseases of the young animals discussed, and it is for this reason that I bring it before you to see if we could not be mutually benefited. In the diseases of young animals it is the foal that I think the majority of us are most interested in; and he it is that has given the most trouble, and no doubt you have all had the same anxious and unsatisfactory experiences that I have had; but I hope you have had better success in treating them. Why the foal should be more liable shortly after birth is something I hope to learn; or at least should very much like to. Fleming in his work on obstetrics claims that the calf is more subject to pervious urachus than the foal. This has not been my experience, for in my own practice of twenty years, I cannot call to mind but one case of pervious urachus in the calf, while it is of common occurrence in the foal. The list of diseases are numerous in the foal. We have pervious urachus edema of the umbilicus, inflammation of the umbilicus, bleeding from the umbilicus, etc., all of which are amenable to treatment. Now inasmuch as there was a paper read last year in Lansing on scrotal hernia in the foal, I would like to say a word. Hernia in my opinion is very rare, but the enlargements are very common; I have never had to interfere, I believe, but in two cases; those I found strangulated and by reducing them, and by applying a compress and keeping it there for two or three days, they came out all

* Read before the Michigan State Veterinary Medical Association, Saginaw, January 26, 1910.

right. Unqualified and unscrupulous men travel the country, and every enlargement they see in a foal, they make the owner believe it must be operated on, when he had better pay them to let it alone; or better, set the dog on them. Several times I have been called after these fakirs had been there and had the owner pretty well scared, but he would feel better after I explained matters to him, telling him it would be all right when a year old. But the main object I have in view is to gain all information I can concerning the, to me, dreaded disease arthritis, so very common to young colts, at least in my locality, of which I find two varieties; one I term rheumatic and the other scrofulous. The rheumatic form shows itself from one day to two or three weeks old; it will be noticed by swelling perhaps in one joint first gradually going from one to the other, accompanied by soreness and constitutional fever, grows gradually weaker and finally succumbing to the disease. The scrofulous form develops at any time up to six months old, after which time it is very rare. Colt may appear all right, when all at once he will become lame in one limb, mostly always a hind one. Appetite usually good for a time, even after he is unable to get up alone, and invariably dies. On post mortem will find the joint filled with ichorous pus, cartilages all absolved and bones necrosed.

The next bugbear is the great, fat, fine looking foal; seems all right for a short time, suddenly takes a notion to lie down and sleep; for a time he will get up and suck, later on you will have to make him get up; still later have to help him, and finally will not suck when you get him up, but all the time seems to suffer no pain whatever, but just seems to sleep himself away.

Such colts are generally born with a very large umbilicus. In my opinion the smaller the umbilicus the smarter the colt and the sooner he is on his feet and looking for the teat. This kind is generally thin in flesh, while those with the larger umbilicus are generally fat and flabby. Now in the first two, viz., rheumatic and scrofulous arthritis, the surest cure is prophylaxis. For this have your mares foal later in spring, so that they can foal out on the grass, for it is in those foaled indoors where this disease pre-

dominates in some filthy old shed perhaps. And when we consider the structure of the umbilicus, consisting as it does of two arteries and a vein, together with the large opening of the urachus, all serve as a railroad for the admission of germs. In view of this, it is a good plan to have a good strong disinfectant ready to apply to the naval at birth and daily until the healing is complete. I think I have averted several cases of joint disease by this procedure, and notably so among lambs.

When the disease does develop, my treatment is antistreptococcic serum injected hypodermically, at the same time giving the mother a draw of potas. iodide twice daily. Since adopting this treatment the fatalities have been a great deal less. Now the third disease (I do not know a name for it), I mean the one that sleeps himself to death, is the one I would like to discover a remedy for; as yet I have found nothing tangible. Last year I began on a line of treatment consisting of injections of strychnine, Park Davis' cardiac tonic, and neuclin solution, but did not see my patients early enough in the disease for a fair trial, so will continue it next season and hope to get some in the early stages of the trouble.

The best I can do at present is to give my opinion of the cause, be it right or wrong. By close observation I find it very rare in the calf and pig, but very common in lambs and at intervals in the foal; you all know it is no uncommon sight to see a number of lambs lying dead around a barn yard. So reasoning from this, I have come to the conclusion that it is caused by over copulation. I am informed that a ram will cover fifty or sixty ewes in a single night, and very likely some of them more than once, while the stallion is often bred to several mares in a day. The bull, on the contrary, is very rarely overdone in this respect. These are my reasons for believing that this living death has its origin right at the time of fecundation.

Summary.—Restrict your stallions to two mares a day; in your larger flocks put two rams where now you have only one; use your disinfectants persistently from birth till naval dries up on colt and lambs, and in my opinion you will have taken a

long stride towards eradicating these dread diseases and at the same time adding numbers to our live stock and increased wealth to our individuals and to our state at large. I presume the foregoing will be disputed by some, and I hope discussed by many, for it is not from papers, but from discussions that we get our information (especially this one; for by this we get the experience of many, while the best a paper can do is to give the experience of one.

ARTHUR L. WOOD, D.V.M., Assistant State Veterinarian, Hampton, Ia., in renewing his subscription to the REVIEW, writes: "Here is where one surely gets his value received. It is with pleasure that I forward you \$3 to have my name on your mailing list for another year. I am much pleased to note the advance the REVIEW has made and is still making."

THE January meeting of the Missouri Valley Veterinary Medical Association at Kansas City, was, as the REVIEW predicted, one of the best in some time. The papers were good and the discussions brought out by them very interesting and valuable. Our readers will be furnished with a full report of this important meeting in our next issue.

The Idea, Lexington, Ky., February 9th, gives an account of the use of the X-ray in a case of persistent lameness in the pastern of a trotting stallion under the care of Dr. Jas. T. Shannon, of Lexington. Dr. Shannon had the horse taken to the University of Kentucky, where Prof. Pence took a very satisfactory picture of the pastern joint. The owner of the stallion had an idea that some foreign material, such as a piece of wire or nail had penetrated and broken off, which accounted for the persistence of the lameness. Through the use of the X-ray, Dr. Shannon was able to convince his client that such was not the case. *The Idea* concludes the article by saying. "this is probably the first time that the X-ray was ever used for such a purpose."

[The clinical application of the X-ray, on account of expense and other reasons, certainly is not general; but we had the pleasure about two years ago of seeing, by the aid of the X-ray, an iron rivet in the digestive tract of a puppy, at one of the meetings of the Veterinary Medical Association of New York City.—ED.]

RABIES.

BY W. W. YARD, D.V.S., DENVER, COLO.

A rabies scare is about to be the means of having all the dogs killed if some foolish and inhumane persons could have their way in the country and city. Two years ago Dr. H. H. Bird of the R. V. C., was called to see a cow which he pronounced to be rabid; this was about 125 miles in the northern part of the state. He held an autopsy and sent the brain, etc., to Dr. B. F. Kaupp, pathologist at the State Agricultural College at Fort Collins, and after the usual laboratory work and inoculation of guinea pigs the disease developed. Later on Dr. Kaupp received more specimens, and after a careful investigation he found in all the cases a direct history of dogs being in the vicinity. After this he says he received two horses, two cows and eight dogs from the same city. The dogs had bitten people, and as a check against his laboratory, two inoculations were made; both rabbits went off their feed on the 14th day and on the 17th day one died, and on the 18th the other. The Negri bodies were found in both the brains, thus confirming his diagnosis. The two persons were advised to take the Pasteur treatment. A report was made to the city of Greeley and they passed a muzzling ordinance; this was done and the specimens of rabies ceased to appear at the college for investigation.

One dog was sent from Loveland, one from Fort Lupton, and there have been at least 125 specimens sent to the laboratory of the State Agricultural College and the state university, and in nearly every one the report has been rabies.

We are writing now for information as regards the probability of this disease being rabies. Part of the professional men think light of the idea and a number of physicians and also prominent veterinarians say they have not only their own ideas about it, but their clinical observations, that it is surely rabies.

We know that in 1906 there were about fourteen states of the east in which rabies was reported. This is about four years, and

if the authorities of the universities and the government pathologists of the East say that they had it there, is there any doubt as to why it could not appear in the western states.

In the last six months there have been about three hundred cattle belonging to the farmers and dairymen around Denver that have been reported by the veterinarians as having rabies, and in almost every case they have traced the time when some dog has been around.

The clinical observations have not been entirely diagnostic in all cases as that of rabies, but what is it if it is not rabies? This question can be decided later on, but the thing to do at once is to control the dogs and other animals that might have it, until it can be decided what it is; and there is a great chance that it will be found to be rabies in almost every case. Not because a dog bites is it rabid, but in many cases the dogs have gone mad after the biting.

In the late nineties, I was house surgeon in the hospital of the American Veterinary College, New York, under Prof. A. Liautard. The night before the house surgeon on inside duty had accepted a dog which he thought was mad and shut it up in a box stall on the second floor. The next day was my first day of the new work to go on inside duty, and it was the practice of Dr. Liautard at the change of watch every Monday morning, to visit each ward and each patient, there being about eighty all told. As we started up the stairs from the office this dog gave a peculiar bark which neither of us had heard as yet; when this gradually died away the doctor turned to me and said, "Doctor, take notice of that bark the next time, as I am almost sure it is a case of rabies"—although he had not seen it. Upon the return of the house surgeon who was in charge the week before, he obtained the history and sure enough it was that of rabies; the dog died in a few days. The brain, etc., was sent to the City Health Pathologist and it was pronounced a case of rabies. This will show what experience will do in making, or drawing a person to making, a suspected case of rabies (The bark is a diagnostic symptom.)

REPORTS OF CASES.

DIVISION OF THE FLEXOR PEDIS ACCESSORIUS TENDON AND ALSO THE PERONEUS TENDON FOR STRINGHALT.

By A. B. ELLIS, D.V.S., Los Angeles, Cal.

So much has been said about the operation for stringhalt. Everyone I have ever consulted seems to think after the peroneus tendon was divided there was nothing else to do. Some writers recommend operating above the hock and others below it. I have also heard it said that some operators have divided the fascia of the thigh just in front of its union with the extensor pedis tendon. Personally I have no faith in this procedure. What is the cause of stringhalt? It is quite certain that the movement is involuntary. It must, therefore be dependent on some mechanical operation to overcome this condition. I have not had the opportunity of operating on many of these patients; but have only had one failure out of three cases. I have seen practitioners divide the peroneus tendon time and time again without the result. When you study the action of the flexor pedis accessorius tendon and the tendon of the peroneus, you find the action almost the same. The flexor pedis accessorius tendon joins the perforans at about two-thirds the distance from its commencement; and the action of the perforans is to flex the phalanges and assist in extending the tarsal joint. The peroneus joins the extensor pedis and assists this tendon to extend the entire digit. The flexion and extension of the hind leg is very complicated, and as I have said, the division of either of these tendons only has a mechanical action. Now, we all know where the peroneus tendon is, and almost any of us can find it with our eyes shut. But to locate the flexor pedis accessorius tendon we have to go to the other side of the leg. This tendon runs down the inner aspect of the hock, very superficial, just anterior to the tendon Achilles. Anybody that has

ever done neurectomy of the anterior tibial nerve, has picked up this tendon more than once. I make my incision just as though I was going to do the anterior tibial operation, only just a little anterior; this is the best way I can explain this operation in a surgical way. Any student that has dissected these tendons out recently and is familiar with them, will have no difficulty in locating them. Now, the way I look at this operation is, if I were going to operate for stranghalt I certainly would divide both of these tendons. I do not think our textbooks mention the division of the flexor pedis accessorius tendon. It has been experimental with me, and I would like to have somebody else try it. I have faith in the operation and it is very simple to do.

BOWEL STRANGULATION.

By F. C. MECKSTROTH, M.D.C., St. Mary's, Ohio.

On morning of April 10, 1909, while practicing with Dr. Fred. Miller at Fort Recovery, Ohio, was called to attend a sick four-year old mule. After arriving at the place and inquiring into the history of the case, was informed that the mule had taken sick the previous evening; and, according to symptoms, was suffering from some digestive disturbance. The animal seemed to be relieved when lying on its back with the legs extended up against the wall of stall, and would remain in that position almost continually; occasionally it would put its head to its side and groan as if in great pain. Peristalsis was present in large bowels with no evidence of accumulation of gas in them. Pulse and respiration was slightly accelerated. On account of the extreme pain the mule was given anodynes which were followed by enemas and a dose hypodermically of one of the active alkaloidal cathartics. Being almost certain that the mule was suffering from some fatal condition according to the symptoms shown, and the peculiar action of the mule, anodynes were left to be given and he rested comparatively easy the rest of the day and the following night. The following morning, another trip was made and found the mule on his feet but pulseless; temperature, 103 degrees; no peristalsis, and respiration about 30 to 35 per minute; after a stay of 20 to 30 minutes the mule died. Being very much interested in the case from the peculiar symptoms that were shown a post mortem

was suggested. Both abdominal and thoracic cavities were opened; the large intestines were the first organs examined and nothing abnormal could be found. The small intestines, diaphragm, and thoracic organs were next examined. An interesting condition was found in the diaphragm; it had a round opening in it about $1\frac{1}{2}$ inches in diameter through which six feet of the small intestines had looped through and become strangulated. The texture of the diaphragm indicated an abnormally weakened condition; for on the thoracic side of it was a tumor-like enlargement about the size of a goose egg. This enlargement was composed of indurated liver tissue. The liver itself was attached to this enlargement, with the diaphragm between them. The question arises how did this liver-like tumor get in the thoracic cavity? It appears as if the diaphragm degenerated and weakened at this place allowing the liver to perforate which at the same time closed the opening and adhesions followed; for the liver was attached to diaphragm at this place. This condition from all appearances had existed for some time. The stomach was distended, due to the obstructed small intestine. The place where the intestines escaped through diaphragm was abnormally thick and rough. Digestive disturbances with continual pain, no bloating and a peculiar recumbent attitude, as this mule presented, should always suggest the thought that a fatal obstruction of small bowels is present which can only be confirmed by holding a post mortem.

UTERINE POLYPUS IN PREGNANT COW.

By WM. J. RATIGAN, O.S.U., Oswego, N. Y.

During the month of January, while riding in the practice of Dr. John H. Summers at Oxford, Ohio, we were called over into Indiana to attend an obstetrical case in a cow. Found an aged Holstein cow of medium size, in attitude of much tenesmus. One calf had been expelled; with it the large tumor, which was outside the orifice, its short peduncle attached internally to the superior internal surface of utero cervix, just within the os. By drawing tumor back and upward toward root of tail, further examination was permitted, which revealed another foetus. This was easily delivered, but natural efforts were prevented by the fibroma. Although the well developed thick cap-

sule of tumor presented a grey tinge, it was evident the interior was very vascular, as the palpitation of the good-sized nutrient vessels through peduncle indicated. The retained placenta were removed and on account of weakness of patient and danger of hemorrhage, it was thought best to await following day to remove growth. This was done the next day by means of ecraseur and astringent packs were introduced to bleeding surface. Next day several large tenacious clots were removed and genital tract flushed. Heard from case a week or more later, both cow and good-sized twin calves were O K. It seemed peculiar that the traction on the foetal membranes did not leave a deformity in one of the calves at least. Or, that the frequent straining of cow for over a year due to the foreign growth did not prevent the cow becoming pregnant or cause abortion. The tumor was twelve inches in diameter, and weighed $14\frac{3}{4}$ pounds. It exhibited a well-defined hilum, to which peduncle attached, around which beneath the capsule was a well developed cartilaginous ring.

THE Colorado State Veterinary Medical Association is taking an interest in furthering the passage, by the present legislature, of efficient sanitary laws and an appropriation for the veterinary section of the State Experiment Station.

DR. CHAS. H. HIGGINS, pathologist in charge of the Dominion biological laboratory at the Experimental Farm, Ottawa, Can., is suggested as one of the members of a commission on water purification. The names of the other distinguished gentlemen of the commission suggested are Dr. Chas. A. Hodgetts, chief medical officer of the commission of conservation, and Major Drumm, M.D., officer in charge of the P. A. M. C. laboratory and health of the Canadian militia units. The Dominion government is vitally interested in Ottawa's water supply, as several parliamentarians and members of civil service are at present down with typhoid. "It was learned on good authority this morning," says the Ottawa *Evening Citizen* of February 6th, "that the Dominion government would be prepared to loan to the city of Ottawa the aforementioned three authorities on bacteriological diseases, as a commission to investigate the typhoid fever outbreak here, and to co-operate with the city in empowering them to report as to the causes and to make recommendations regarding the prevention of a recurrence."

ARMY VETERINARY DEPARTMENT.

VETERINARIANS ON THE RETIRED LIST.

The *Army and Navy Register* of February 4, 1911, brings the following note under the above caption:

" Senator Penrose's amendment to the Army Appropriation Bill provides: 'That hereafter so much of Section 20 of the act approved February 2, 1901, as provides that veterinarians shall receive the pay and allowances of second lieutenants, mounted, shall be interpreted to authorize their retirement under the laws governing the retirement of second lieutenants.'

REMARK.—We hope this amendment to the Army Appropriation Bill will pass. It is very desirable and necessary at the present time. Chairman Turner, of the Legislative Committee, telegraphed on February 8 that the Senate passed this amendment and that it went over to the Conference Committee. The final result will be known early in March. There was absolutely no chance for the passage of the bill "to increase the efficiency of the veterinary service," and it is hoped by many that its continued failure will now mean its final death.

THE RECOMMENDATIONS OF THE BOARD OF OFFICERS TO REVISE THE VETERINARY SUPPLY TABLE.

A Board of Officers appointed to meet at Fort Riley, Kansas, to revise the Veterinary Supply Table of February 26, 1902, consisting of Major Nicholson, Cavalry; Major March, Field Artillery; Captain A. N. McClure, Cavalry, and Veterinarians Plummer, Jewell and Schwarzkopf, held daily meetings, between January 16-30, 1911, and completed and forwarded the proceedings for approval by the proper military authorities. The order detailing the writer as an additional member of the board, came as a complete surprise, but was followed with pleasure and anticipation.

Without intention to divulge official proceedings, an extract of the recommendations of the board is given below for the information of the many army veterinarians who appeared to be

much interested in the matter. The principal new features recommended are as follows:

That twenty-five cents per quarter for each animal be authorized for the purchase of veterinary supplies. At posts where veterinarians of cavalry, field artillery, or the Quartermaster's Department are stationed, ten cents of the allowance for each animal may be used by the veterinarian for the purchase in open market of such medicines and dressings not on the supply table as he may need to meet conditions requiring a special line of treatment, the amount to be available for immediate use in garrison and field service upon the approval of the commanding officer. The money allowance per head per quarter was raised to thirty cents for use in the tropics.

In the preparation of the regular quarterly estimates, the Quartermaster and Veterinarian are to be governed in the money allowance by the total number of animals entitled to veterinary treatment and a current price list of supplies on the supply table, furnished by the Quartermaster's Department.

The old allowance of veterinary supplies for 100, 200, 300 animals was dropped.

A veterinary supply table was retained as it was considered necessary to insure a basic supply of standard drugs and dressings of uniform kind. Some veterinarians had suggested to abolish entirely the supply table, while others wanted it greatly enlarged. Either of these two suggestions was found to be impractical, but several rather obsolete drugs were stricken out, while a few new ones were added. The reserve fund of ten cents per animal can solve the problem for each veterinarian to procure all those medicines, etc., which appeared to be individual choice, and they were widely divergent indeed. There was almost unanimous complaint about the deterioration of hypodermic tablets and hereafter these must be supplied in sealed tubes with five tablets in each tube of uniform size.

Under dressings an unstained flannel bandage was substituted for the red flannel bandage which has held its sway in the army ever since the Civil War in spite of protests during thirty-seven years, a characteristic instance of army conservatism.

Instruments and dispensary equipment are to be issued on memorandum receipt to veterinary hospitals or to veterinarians of cavalry, field artillery and the Quartermaster's Department stationed at posts and remount stations having no veterinary hospitals, but sufficient facilities for proper care. A number of

new instruments were recommended, mostly for operative technique, of which the Quartermaster General had shipped samples for trial and report. They had previously been tested by Drs. Plummer and Jewell. Medicine droppers, thermometers, needles, extra blades for dental floats were made expendable articles.

The veterinary field equipment, which had been absolutely unsatisfactory for several years past, was made entirely new to fit modern conditions. A pattern of a set of five chests (ammunition box size) has been worked out by the board, which is well adapted for promptly administering veterinary treatment to animals of a moving column. The chests are carried on the English model pack saddle, which steadies breakable contents. One set is to be supplied to each veterinarian of cavalry and field artillery, to be regimental property. This would provide each veterinarian with ample supplies and an "assistant" on the march.

A saddle-bag for veterinarians was also adopted after a German army pattern furnished to the board by Veterinarian Grutzman, Fifteenth Cavalry. It is a neat, handy contrivance, containing an emergency outfit consisting of a vest-pocket instrument case, hypodermic syringe, hypodermic tablet case, nose twitch and tourniquet combined, small tin basin, etc.

A farrier's and horseshoer's field equipment was also recommended, but no method of carrying these supplies, because the Cavalry Equipment Board at Rock Island Arsenal is considering this subject.

Eighteen standard veterinary text-books and journals were recommended as a library for veterinarians.

Laboratory equipment, consisting of such articles as incubator, hot-air sterilizer, steam sterilizer, microscope, filters, flasks, etc., are to be supplied only on special requisition of a veterinarian with the approval of the commanding officer. This subject was considered at length, because a number of veterinarians seemed to lay stress on being supplied with equipment for making bacterias, etc., but official correspondence showed that any such scheme would be disapproved. It was finally recommended to make the laboratory of the Mounted Service School at Fort Riley the centre of manufacture and distribution of these modern preparations to supply the apparent demand by veterinarians of the line.

Several other suggestions made by veterinarians, such as rendering quarterly reports to be compiled into an annual re-

port; the institution of veterinary courses at the Mounted Service School, etc., were not thought to be proper subjects to be embodied in the proceedings of this board. But it can be authoritatively stated that hereafter young veterinarians, newly appointed, will be ordered to undergo a course of instruction in equitation and army veterinary practice at the Mounted Service School before joining their regiments.

The Board worked hard. There was at times a little fire in the air, just enough to keep up spirits, but otherwise all through earnest wish for improvement was evident and strenuous labor the order of the day and even night. The enthusiastic, yet prudent help of Captain McClure was of the finest type. It is not probable that the new veterinary supply table will satisfy the expectations of every veterinarian, in the face of the widely different wishes submitted by them. To the twenty-six circular letters sent out by the Board twenty replies were received, and some of them showed deep interest and hard study. A few replies were very brief and one of our oldest members left the whole matter "to the intelligence of the board," and we hope that we shall not disappoint him. But, however this may all be, it is sure that if the recommendations of the Board are approved in their entirety, a great step forward will have been taken in supplying the means for an improved army veterinary practice.

OLAF SCHWARZKOPF.

ARMY VETERINARY NOTES.

A board, composed of Veterinarians Robert J. Foster, Twelfth Cavalry, and Robert C. Musser, Fourteenth Cavalry, and Mr. Edward P. O'Connell, Veterinarian, Quartermaster's Department, is appointed to meet at Manila December 2 to consider and report as to success of treatment for surra and the practicability of transporting officers' mounts from the Philippine Islands to the United States without danger of carrying infection and what quarantine measures to prevent same can or should be taken at this port. S. O. 281, December 1, Philippine Division.

Veterinarians Charles H. Jewell, Sixth Field Artillery, and John H. Gould, Eleventh Cavalry, have been detailed by the War Department to attend the annual meeting of the American Veterinary Medical Association at Toronto, Canada, August 22-25, 1911.

O. S.

CORRESPONDENCE.

New York, U. S. A., February 10, 1911.

Editors AMERICAN VETERINARY REVIEW, New York, N. Y.

We notice on page 673 of your February issue an article by Dr. Wm. P. Hill, of the First Field Artillery, stationed in the Philippine Islands, descriptive of the use of "Peroxide in Pneumonia." In this article the gentleman states he tried "Nuclein, Tallianine, Stimulants, etc., etc." with an expected fatal termination, when he tried peroxide, and the case terminated as he expected.

It is well known that "Tallianine" is guaranteed for one year only, and equally well known that we accept return of this product in original containers and replace the returned goods with fresh stock without expense to the purchaser other than for transportation charges. No Tallianine has been sent to the Philippines since 1907 owing to the difficulty in securing cold storage for it while en route and in stock there, so it is fair to presume that if Tallianine were used in this case the injections were useless only because the active principle of the product was exhausted. Of course returns from the Philippines are impracticable owing to the distance from our home office which will explain why we have not asked veterinarians stationed there to use Tallianine; but we hope some day to arrange matters with the Quartermaster General of the Army permitting its transportation in cold storage and similar storage while in stock there. In this case Tallianine will be effective for a practically indefinite period as a low temperature will preserve its properties while a prolonged high temperature will destroy them. Added to this and as explained in all our printed matter, stimulants of any kind, and particularly alcohol, should be avoided in connection with the use of Tallianine for reasons which must be apparent to every member of the profession when the character and properties of this product are considered.

Respectfully yours,

WALTER F. SYKES & Co.

OBITUARY.

T. BENTON COTTON, V.S.

Dr. T. Bent Cotton, as he was familiarly known, died at his home in Mt. Vernon, Ohio, January 6th, in his seventieth year, following an acute illness of but three days' duration. Dr. Cotton had been in frail health for several years past, but was able to be about his premises, where he devoted considerable of his time to gardening, which he found a congenial pastime. All things in nature appealed to his big lovable nature, and the final summons found him among his birds and chickens, which he fed with loving hands, referring to them tenderly as his "boarders." One of the most beautiful sides to his life was the domestic side, where his thoughtful solicitation for the comfort and happiness of the members of his family was a constant feature. Dr. Cotton was a son of the late Hon. Emmett W. Cotton, and was born in Mt. Vernon on March 21, 1841. In 1862 he enlisted in the Twenty-sixth O. V. I. and went into camp at Delaware, Ohio. Upon arriving at Columbus he was appointed recruiting agent, with commission of second lieutenant. Afterwards he assisted in recruiting a company and was assigned to the One Hundred and Twenty-first O. V. I., serving as second lieutenant until 1863,



when he received wounds at Perrysville, Ky., that disabled him. Following his discharge, he returned to his birthplace, where in the early 70's he took up the study of veterinary medicine. He was graduated from the Ontario Veterinary College in 1882. Dr. Cotton was a member of the American Veterinary Medical Association and of the Ohio State Veterinary Medical Association, and was elected honorary member of the latter organization in January, 1910. The last meeting of the A. V. M. A. that the doctor attended was at Philadelphia in 1908.

He was one of the first agents of the Knox County (Ohio) Humane Society, which was organized in 1884, and was active in it up to the time of his death. He was also a member of the Poultry Fanciers' Association and an enthusiastic member of the Grand Army of the Republic, and served as commander of Joe Hooker Post No. 21 in 1899.

Dr. Cotton is survived by his wife and Miss Anna Bell Cotton, an adopted daughter.

GREAT is the American draft horse, mighty in war or in peace, more powerful on the farm and the most important factor in commercial interests, to keep the wheels of industry going to load and unload hundreds and thousands of trainloads every day. Take the draft horse out of the cities and it would bankrupt the nation, and the railroad freight trains would stand idle on the side tracks.—*Live Stock Journal*.

THE annual banquet of the New York American Veterinary College will be held at Reisenweber's, Fifty-eighth street and Eighth avenue, on Wednesday evening, April 26th. A large gathering of the graduates from the two oldest institutions for veterinary education in America (whose amalgamation formed the present school) is anticipated. President MacKellar called a preliminary meeting on February 16th for the purpose of appointing a dinner committee and making other necessary arrangements. This early assembling of his forces on the part of the president, and the enthusiasm manifested by Secretary Carey, foretells an even more successful affair than that of last year, which was the best in many years. Each member will receive a communication from the secretary in the near future, advising him of the hour of the meeting of the association on the day of the dinner.

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By PROF. A. LIAUTARD, M.D., V.M.

DIABETES MELLITUS IN A DOG [*R. Watts, Student*].—Cross-bred Welsh terrier had a fractured skull, having been kicked by a pony. The frontal bone was driven in and had to be raised, as it pressed on the brain. For three days the dog was delirious, howled repeatedly and kept moving, turning round in a circle from left to right. When the delirium stage had passed, the dog only seemed to understand that his food was to eat and his water to drink. Tonics and thyroid tablets were given. Recovery was partial, as the dog acted queerly afterwards. He has been treated since for eczema, otitis or worms, but in none of these occasions did he seem to show any ill effects of his fracture. Then his hair began to fall off; he became lame on the left foreleg and was then reported drinking excessively and eating all he would get. He became bald on the forehead and under his body, while the hairs of his back became patchy and thin. The case was diagnosed as one of diabetes mellitus, resulting from the kick and fracture. The dog finally had fits and was destroyed. No post mortem was allowed.—(*Vet. Record.*)

CHYLOUS ASCITIS IN A CAT [*Messrs. Smythe and Smythe, M.R.C.V.S.*].—Fine Persian cat, great hunter and feeding on his hunts, viz., raw wild rabbits. He shows the ordinary symptoms of ascitis, but no other signs of illness, except a large abdomen and from it difficulty in breathing. Paracentesis abdominalis is performed. Four pints of fluid are extracted. It has the appearance of pure milk. After the operation, no new growth or anything abnormal is detected on palpation of the abdomen. Great improvement follows and after getting 2 grains of calomel, the cat is sent home. However, after seven weeks, another operation was necessary as the abdomen has again grown large. One pint of same characteristic fluid is taken off. The cat went home again and has shown no falling off in condition. The

fluid was evidently chylous in nature. For treatment, milk and all fatty foods were taken off his diet.—(*Veter. News.*)

TABES DORSALIS [*By the same*].—The case presented a series of symptoms resembling much those observed in man. Three-year-old dog was said to have rheumatism. The skin is hypersensitive and the dog howls with pains principally at night. At times he looks healthy, but again shows knuckling over suddenly on one or the other of the carpal joints. Later, these knuckles were so severe that the dog would fall. Salts of potassium, iodide and bromide with aperients gave no change. Then great inco-ordination of movement came. The forepaws were lifted high in walking and set down with force. Sense of distance was about absent and in mounting a step, the dog was unable to judge the height or position. He had ataxy with rolling motions while walking. Then complete paralysis set in and the dog was destroyed. He had had distemper when a pup, but had no chorea or twitching contractions left. No post mortem was allowed.—(*Vet. News.*)

ADRENALINE IN LAMINITIS [*Capt. A. J. Williams, F.R.C.V.S., A.V.C.*].—This is the record of two horses, which had laminitis and in which the result was not as satisfactory as anticipated by the records of others. The first horse was under treatment from September 1st to September 30th, during which he had two relapses, after slight improvement, and was finally sold. The second, after about twelve days of treatment, was considered incurable and destroyed.

The author remarks: "Case No. 1 showed no improvement until the morning after adrenaline had been injected; the second injection was followed two hours after by a far worse condition and then by marked improvement. Another relapse took place and injection of adrenaline was followed by improvement the next morning. Case No. 2 was very bad from the start and it was astonishing to see how he had improved some twenty minutes after the injection, being able to trot after an hour. This did not last. Three other injections had no effect afterwards.—(*Veter. Journ.*)

FOREIGN BODY IN THE PALATE [*George D. Martin, M.R.C.V.S.*].—History of two cases which are very similar. Both have occurred in dogs and in both consisted in splinters of wood im-

bedded in the hard palate, close to the last molar tooth. In both cases there was more or less difficulty in opening the mouth. It was necessary to chloroform the animals to control them, to make a perfect examination and to operate on them. The splinters of wood were extracted with nippers. In one it measured 1 inch in length and $\frac{1}{8}$ in thickness. In the other there were two pieces, the halves of a round piece of dead wood, $2\frac{1}{2}$ inches long by $\frac{1}{2}$ inch thick. The hemorrhage was trifling in both and recovery uneventful after a few days.—(*Veter. Journ.*)

CASTOR OIL POISONING [*Frank Chambers, M.R.C.V.S.*].—This occurred in South Africa where piroplasma parvum are in abundance and an outbreak being reported; the author was called to see to it. Twelve cattle were dead and nine remaining ill. The farmer to keep the cattle free from ticks had smeared them with equal parts of castor oil and antifriction grease. Nothing happened for several weeks until one cow died and after a few days others became sick and twelve died in rapid succession. The post mortems did not reveal any of the lesions of East Coast fever, but all had inflamed patches of the rumen and abomasum. The lungs, liver and kidneys were normal. As the cattle had been smeared once a week and had naturally licked themselves, as they ordinarily do, it is evident that they absorbed a large quantity of castor oil which in time produced ill effects. The remaining of the herd, more or less sick, had their legs tremendously swollen, the dewlaps dropsical and great difficulty in moving, their joints being blistered and cracked. They had also diarrhoea. Simply opiate treatment and washing away the applications on the skin formed the base of the treatment.—(*Veter. Journ.*)

DEGIVE'S OPERATION IN UMBILICAL HERNIA—DEATH [*E. Wallis Hoare, F.R.C.V.S.*].—Filly has a not very large hernia, although the hernial opening is rather wide. She is operated by Degive's method, does well for ten days, and then gets off her food. The temperature rises to 106° F. Diarrhoea sets in and as the case gets in hopeless condition, the animal is destroyed. At post mortem lesions of septic peritonitis were present and also a minute opening in the caecum, which was adherent to the hernial ring.—(*Ibidem.*)

“MAD” STAGGERS [*By the same*].—Five-year-old mare is observed being in pains, lays down, rolls and has unsteady gait.

Spirits ether nit. is given. She becomes violent, rushes about the stall, falls down helpless, struggles with all four, rushes against the wall and inflicts to her forehead a deep wound. Previous to being seen by the author she had one ounce of chloral hydrate given to her in oil. It is very difficult to approach the mare, her pupils are largely dilated, the pulse is full and quick. Aloes, calomel and croton oil were prescribed. The symptoms gradually subsided and the mare became quiet, all evidence of excitement passed off.—(*Veter. Journ.*)

PIGEON CASE [*George W. Wooldridge, F.R.C.V.S.,-N.S.*].—This bird somewhere or another had swallowed a pin or a needle. He was brought to the author, who found it protruding from the middle of the back. It was easily pulled out with forceps. No bad effects resulted.—(*Ibidem.*)

VARICOCELE IN DOG [*E. Wallis Hoare, F.R.C.V.S.*].—Fox hound had a long scrotum and on that account the testicles were constantly getting injured while hunting. The cords are unusually long and thick, small pulsations are felt, the testicles hanging very low are smaller than normal. The dog is castrated. Eucaine and adrenaline are used. Both cords had the spermatic veins enormously enlarged and varicous. The artery was larger than normal. Both vessels were ligated and the testicles removed with a portion of the cord. Secondary hemorrhage from a dilated vessel on the edge of the scrotal wound took place and was arrested by ligature. Good recovery followed.—(*Veter. Journ.*)

NOTES ON NUCLEIN IN DOG'S DISTEMPER [*James Peddie, F.R.C.V.S.*].—The author gives a minute record of several cases of distemper among many that he has treated and where with other drugs varying according to the symptoms and the condition of his patients, he has extensively used nuclein and obtained excellent results. Indeed, he says, among his conclusions: "I have in all treated thirty-two cases of distemper with the aid of nuclein solution (veterinary) and have only four deaths, a percentage of recoveries which I could not have hoped for with the treatment previously adopted.—(*Ibidem.*)

LORDOSIS (HOLLOWBACK) IN THE HORSE [*F. C. Mahon, M.R.C.V.S.*].—This is the illustrated record of a twenty-two-

year-old horse, which was worked slightly up to the time when for humanity's sake he was destroyed. The history was that until within the last year of his life the marked concavity of the vertebral column was not so pronounced as to attract attention. In early life the horse had worked in a fire brigade and for ten years after did the ordinary work of a job master. A few months before his death he was occasionally pulling a manure cart. The decreasing muscular power had become well marked and his back would give away under the slightest weight put on it. The concavity of the vertebral column was measured by taking a line from the summit of the withers back to the angle of the croup and the line drawn downwards from the centre of the horizontal line, showed the extraordinary measurement of 8 inches, a measure that deserves to be registered.—(*Veter. Record.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

LARGE SIZE CALF CAUSES DISTOKIA IN A PRIMIPARA [*Pierre Bitard*].—Four-year-old pregnant cow is 35 days behind her time to deliver. In good health up to her seventh month of gestation, she gradually becomes sick, loses flesh, refused eating and her abdomen has grown enormously large. Constantly lying down, she has tympanitis and by violent efforts she expels feces covered with false membranes. Her condition is very bad and an unfavorable prognosis is given. Still vaginal exploration reveals that the neck of the uterus is largely dilated and some of the membranes are protruding through it. But the animal is in such condition that she can make no efforts to expel her calf, which is found in anterior presentation and right cephalo-iliac position with one foreleg under the chest and the other passed backwards over the neck. Notwithstanding careful manipulations the extraction of the foetus is found impossible on account of its enormous size; and taking into consideration the condition of the cow it is thought better to have her slaughtered. The following were the measures obtained of the foetus after its removal from the uterus: Length from the forehead to the base of the tail, 1 meter 44 centimeters; circumference round the chest, 1.02 meter; round the body in front of the stifles, 1.12

meters. The calf weighed 97 kilogrammes. It was a record in its size, says the author.—(*Prog. Veter.*)

MULTIPLE SEBACEOUS HAIR CYSTS IN A HORSE [*Dr. Morel*].—Making an inspection at the Hippophagic abattoir, the author had his attention called to a round tumor as big as the fist, situated at the base of the neck of a horse, near the anterior border of the scapula and closely adherent to the tissues underneath. It had a semi-solid consistency. In opening it, there was an escape of great many little greyish balls resembling very much small lead shots. They were formed of sebaceous matter, were easily crushed, soluble in ether, xytol and toluene. There were also numerous hairs of various color, measuring 6 centimeters in length. The walls of the cavity was formed by a very thin membrane, grey-white in color and arranged in folds. Besides this cyst, there was another fluctuating pouch, smaller and filled with hairs and sebaceous matter. A third one even smaller had the same contents. These collections were evidently dermoid sebaceous hair cysts. Under the microscope the cystic membrane presented all the characters of the dermis.—(*Bullet. de la Soc. Cent.*)

A FALL, A BRUISE, A SPLIT AND A FRACTURED BONE—HEMORRHAGE [*Mr. Sourrel, Army Veterinarian*].—Five-year-old Anglo-Arab horse gets loose from his stall, starts at full gallop, slips and falls on the left side. When he gets up, he is very lame on the left hind leg. Careful examination, by palpation, auscultation, rectal examination reveal nothing, and as there is no deformation or swelling anywhere, a diagnosis of severe bruise is made and rest with fomentations are prescribed. Another examination is again negative, although the possibility of a fracture is entertained. Thirteen days after the accident, in the morning, a fracture of the ischium is manifest by the depression of the point of the left hip. The animal is placed in slings. The following day, in the afternoon, he suddenly hangs in the slings and dies as these are taken down. He is lowered down and post mortem is made. When it was found that there was a hemorrhage filling the pelvic cavity, with a fracture of the ischium from the ilium and from the pubis, fracture of the ilium above the cotyloid cavity, separation of the sacrum from the ilium and nine large splinters of bone from the ischio-iliac fracture.—(*Rev. Gener. de Mec. Veter.*)

GEMELLAR GESTATION—DROPSY OF THE ALLANTOID [*Pierre Bitard*].—Record of a case of parturition in which a cow, being fifteen days behind her normal epoch for delivery, became very sick and presented among numerous symptoms accusing her distressing condition, an enormous abdomen, giving rise to serious organic disturbances of the organs of the two great splanchnic cavities. A vaginal examination made with much difficulty permitted the detection of two foetuses. The membranes that surrounded them were very large and although they were incised, but little fluid was allowed to escape. The cow could not be delivered and died the next day. At the opening of the cadaver about one hundred litres at least of fluid escaped from the allantoid cavity, and the two foetuses, one male and one female, were extracted. The first weighed 51 kilogrammes and the other 48. They both were well developed.—(*Prog. Veter.*)

LINGUAL TUBERCULOSIS [*P. Chausse, Sanitary Veterinary Inspector*].—This localization of tuberculosis is rather rare and but few cases are recorded either in French or German literature. The author has lately observed another case obtained from a four-year-old steer, in fair condition, but affected with extensive thoracic tuberculosis; the bronchia, trachea, tongue and digestive canal were also the seat of secondary infection. The case was a typical one of open tuberculosis. The lingual lesions were peculiar. The tongue had ulcerations and sub-mucous lesions. There were two ulcers, one on the left superior border of the tongue, oval in shape, with irregular edges, and on being incised showing superficial caseous nodules. The other ulcer was smaller and situated on the right lateral face of the organ. The sub-mucous lesions had a round form and when cut into showed a muscular tissue partly caseous. It is probable that these lesions were due to injuries of the tongue, where they form true centers of inoculation for the virulent products of the bronchia and pharynx.

The differential diagnosis between this condition of the tongue and that presented in actinobacillosis and actinomycosis can generally be made out by macroscopic examination, but in cases of doubt the histological and bacteriological characters will readily settle the question.—(*Rev. Gener. Medec. Veter.*)

ACCIDENTAL SECTION OF THE EXTENSOR TENDON OF THE PHALANGES—RECOVERY [*Drs. Huguier and Floriot, Army Veter-*

erinariansentirely destroyed, with its sound part remaining firmly adherent to the superior third of the cannon bone by several adhesions. The wound, however, cicatrized normally, and the horse was soon able to resume his work. The perfect action of the leg was kept up by the lateral extensor of the phalanges which had united to the remaining healthy portion of its congener.—(*Recueil de Medec. Veter.*)

ULCEROUS ENTERITIS OF UNKNOWN CAUSE [MM. Guérnau, Dignac and Chinon, Army Veterinarians].—Biche was a mare, aged 17, which was laid up on account of her extreme emaciation. This condition was attributed to overwork and insufficient food. Good hygiene and plenty of building-up food did not improve her. Yet, she presents no special symptoms, except loss of appetite and flesh. Auscultation reveals nothing on the respiration. Circulation is normal. Defecation is natural, there is no fever and rectal examination is negative. Later, however, she has polyuria without sugar or albumine. Soon foetid diarrhoea takes place. Suddenly the temperature rises 39° C- 39.5° C. Slight colics occur and the mare dies.

Post mortem revealed: Suppurative peritonitis, ten litres of sero-purulent fluid, peritoneum covered with exudates and congested. The intestinal lesions are extensive on the small intestines, cæcum and cæcal portion of the colon. In some places, there are nodosities varying in size from that of the head of a pin to that of a large bean. There were the first stage of the ulcerations. Those are small, irregular and some are looking like

chancres, principally those of the small intestines. In some places the ulcerations are running through the intestinal walls, which are necrosed. The other organs showed no specific condition. This ulcerous enteritis resembled by its termination form of the typhoid fever of man.—(*Bullet. Soc. Centr.*)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

CARDIAC PALPITATIONS IN A HORSE [C. Verlinde].—Seven-year-old heavy draught horse has done its work well, when one day he refuses his food. He stands in his stall, with the contractions of his heart so violent that the whole body is shaking. They are between 76 and 80 to a minute. Respiration is about normal. Temperature 40.6° C. Pericarditis is suspected. Mustard is applied to the chest. Electuaries of digitalis and cinchona are prescribed. In the afternoon the condition is worse. The heart beats are such that they can be heard several yards away. The chest and flanks are shaking and the neck, croup and thighs are also. The shocks are between 84 and 88 to the minute, yet the respiration is about normal. At auscultation a dull sound is heard, covering those of the heart. The pulse is small, weak. Temperature lower, 39.4° C. Citrate of caffeine and benzoate of soda in distilled water are injected subcutaneously. Towards evening, condition is better. Cardiac beats are down to 70 and temperature 39° C. The pulse is stronger and the artery fuller. A little more caffeine is given. The next day the improvement continues, but the horse is very excitable. One more dose of caffeine. No more bad manifestations are observed; the horse is returned to work a few days after.—(*Bull. Med. Vet. Prat. Malines.*)

TWO CASES OF CHRONIC TETANUS—RECOVERY [By the Same].—Concise records of two cases where all the symptoms were well manifested, and in which the treatment was for both about the same. It consisted in quietness, in dark stall, subcutaneous injections morning and evening of 10 centigrammes of pilocarpine, 100 grammes of chloral in enemas three times a day. Diuretics and good heavy blanketing were used. In one horse the pilocarpine was not given, but towards the end anti-

tetanic serum was used twice a day for six days. Both cases had severe manifestations which subsided by degrees, after a duration of 8 or 10 days. Recovery was perfect in both. The last case had a severe attack of tympanitis by over-feeding from which pilocarpine relieved him in quick order.—(*Ibidem.*)

MORPHIA AND OPIUM IN OUR DOMESTIC ANIMALS [*Prof. A Vanden Eeckhout*].—At one of the meetings of the Veter. Society of Belgium, the author delivered a long lecture on the subject, where in considering the general effects of these drugs, and relating some of his experiments, he resumed his article in saying that "morphia had in all animals a specific action on the brain; in some it produces sleep, in others on the contrary excitement and a kind of drunkenness. In all it seems to promote a sensation of comfort and removing unpleasant sensations; it is not a central anaesthetic as chloroform; in all animals that it puts to sleep, it abolishes greatly the sensibility to such an extent that often acute pain, by the use of the bistoury is well supported. On the contrary in those that it does not produce sleep, the feelings of painful excitation is not abolished.

In relating the therapeutic uses of morphia in veterinary medicine, the author writes: "For dogs it is indicated as hypnotic, as reducing pains, quieting respiration, as constipating and as a sedative of the intestines, as it is in man.

In cats, it is indicated in small doses to promote constipation.

In horses it may be used sometimes with success to subjugate vicious animals. It quiets cough, promotes constipation, and acts as a sedative in intestinal troubles. It is contra-indicated in most cases of colics; those by indigestion, by constipation, volvulus, wind colics, etc., etc., in all those cases the agents that produce bowel evacuation are indicated. It must not be used to obtain hypnotic or analytic effects, nor as a local anaesthetic.—(*Annal, de Bruxelles.*)

TUBERCULOUS PERITONITIS WITH ASCITIS IN A HORSE [*Charles Eyvaert*].—Fourteen-year-old mare has an enormous belly. She aborted three months ago of a dead foetus, but yet her abdomen remained large. She is in fair condition. The pulse is small and hard, the conjunctivæ congested, no swelling under the chest, nor on the extremities. The temperature is 38.5° C., respiration accelerated. Auscultation and percussion are negative. The flanks are hollow. Perimeter of the abdomen

in front of the hips is bigger than around the girth. Vaginal examination shows the absence of pyometry and hydrometry. Rectal examination feels the floating motions of the liquid mass by pressure on the intestines. Dropsy of the peritoneum is diagnosed and a treatment by purgatives and diuretics prescribed. No result is obtained and the owner declines a puncture of the abdomen. The cow goes to the slaughter house. In opening the abdomen 225 litres of clear, yellowish fluid were removed. There were only extensive lesions of miliary tuberculosis involving the layers of the peritoneum. All the other organs were free from disease.—(*Ibidem.*)

DR. A. H. LEGENHAUSEN, Jackson, Minn., in renewing his subscription to the REVIEW, says: "Of course it is useless to say that the REVIEW is the staff of the veterinarian; and the only thing I regret is that it does not appear oftener."

THE second story of the anatomical wing of the New York State Veterinary College is nearing completion. This will double the capacity in the anatomical department and in addition will give an enlarged lecture room.

DR. H. J. JOHNSTON has gone from Kenora, Ont., to Forward, Sask., Canada. In renewing his subscription to the REVIEW, the doctor takes occasion to say: "I consider it of more value than my text books, therefore could not get along without it."

AT the election of officers to the Salem (Oregon) Humane Society on January 31st, Dr. D. D. Keeler was elected president. President Keeler suggested to the organization that premiums be offered for the best kept horses in the city, thereby stimulating an interest among grocerymen, draymen and others to devote especial care to their horses.

PROF. V. A. MOORE, Director of the New York State Veterinary College, addressed the "New York Farmers" at the Metropolitan Club on Tuesday evening, February 20th. The address took the form of a popular talk, discussing the reasons for so many tubercle bacilli as reported in city milk, and touching briefly on the methods for the control of bovine tuberculosis. It is not possible to estimate the great amount of good that results from talks of that kind.

SOCIETY MEETINGS.

MAINE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting of this association was held at the Augusta House, Augusta, January 12th, at 4 p. m., with President Joly in the chair. The following members answered to the roll call: Drs. Westcott, McGillicuddy, Salley, Watson, Joly, F. L. Russell, Lynch, Robinson, F. E. Freeman, Jackson, E. E. Russell, Inglis, West, R. E. Freeman, Darling, Mebane, Purcell, Ness and Blakely.

The minutes of the previous meeting were read and approved.

Drs. Salley, Joly and Blakely reported favorably on the progress by legislative committee.

The application of Dr. J. L. Parks was read and referred to the executive committee.

The treasurer's annual report showed a good balance on the right side of the ledger.

The secretary's report was postponed to the April meeting to allow him to square accounts for coming banquet, etc.

The election of officers for ensuing year resulted as follows: President, Dr. Geo. F. Westcott, of Portland; Vice-President, Dr. Geo. R. Inglis, Auburn; Secretary, Dr. C. W. Watson, Brunswick; Treasurer, Dr. I. L. Salley, Skowhegan.

The president-elect, Dr. Westcott, in a few well chosen words thanked the association and took the chair. During the course of the evening he reappointed the old committee on legislation and appointed an executive committee of Drs. Russell, Lynch and Freeman.

No papers were prepared for this meeting, as the time was short before the banquet.

The president appointed Drs. F. E. Freeman, G. R. Inglis and W. H. Robinson to read papers at the April meeting, and Bangor was selected as place of next meeting.

At 8.30 twenty members and their guests filed into the dining room of the Augusta House and sat down to an excellent supper.

Under the guidance of our genial toastmaster, Dr. A. Joly, the following program was carried out with occasional interruptions by an orchestra of stringed instruments: 1. "To Our State," Dr. B. A. Bailey; 2. "Municipal Meat Inspection," Dr. W. L. West; 3. "Sanitary Milk Inspection," Dr. W. H. Lynch; 4. "Agriculture," Hon. J. P. Buckley (Com. of Agriculture); 5. "Control of Contagious Disease," Dr. I. L. Salley; 6. "The Legislature and the United States," Hon. S. W. Gould, Congressman from this district; 7. "The University of Maine," Dr. F. L. Russell; 8. "The Press," Mr. Smith.

The following invited guests were present: Hon. Samuel W. Gould, Skowhegan; Hon. J. P. Buckley, Commissioner of Agriculture; Dr. B. A. Bailey, Chairman Breeders' Association; Hon. J. P. McIntyre, Hon. J. M. Deering, Hon. F. S. Adams, Mr. Smith, P. D. & Co.; Mr. Brophy (Press).

This was our second banquet and it was a source of pleasure and profit to all and an occasion to be long remembered. Occasions of this kind serve to bind the members closer together and give us something to look forward to each year, striving to make the occasion a little better each time, until each of the members feels that he cannot under any circumstances afford to miss the association meetings and, above all, the annual banquet.

C. L. BLAKELY, Secretary.

ADDRESS DELIVERED BY W. H. LYNCH, D.V.S., AT THE ANNUAL MEETING AND BANQUET OF THE MAINE STATE VETERINARY MEDICAL ASSOCIATION.

Mr. Chairman and Gentlemen—When I was assigned my subject by the worthy president of our association, I demurred at the idea of so comprehensive a subject; but I was overruled and told off for duty just the same as if I had consented. So I will try to obey orders, although I may not achieve as much distinction as Mrs. Pixley's little boy did when she told him to "set" the old turkey hen. "Johnny," said Mrs. Pixley to her small son, "get some eggs and set the old turkey hen." So Johnny obediently set about the job and when he returned to the house, his mother questioned him. "Well, Johnny, did you set the old turkey hen?" "Yes, ma." "How many eggs did you give her, Johnny?" "I gave her a hundred, ma." "A hun-

dred! good gracious! Johnny, whatever did you go and do that for?" "Well, ma, I just wanted to see the old turkey *spread herself.*"

It would seem that the president expected me to spread myself over a very large territory in asking that I should speak on "Sanitary Milk," which would require a very large number of words and a greater length of time than I am allotted if I should go very much into the ramifications of this subject. However, I shall not do this.

Sanitary milk is healthy milk. Milk from healthy cows, that are housed in clean cowhouses—cows that have bodies kept clean by brushing and care—cows that have clean udders emptied into clean pails. The man who milks must be clean and healthy and wear clean garments which should be kept for wear while milking the cows. The milk pails after being filled must be kept away from contaminating odors and surroundings until put in the milkroom where a temperature of not less than 50 deg. F. should be maintained.

We find milk to be primarily "the fluid secreted by the mammary glands of the division of vertebrate animals called mammalia." The milk of various domestic animals is more or less used by man for food. Milk is an opaque white fluid containing fat globules in suspension, albumin, salts in solution, a variety of sugar called lactose that is peculiar to milk, and caseinogen in partial solution. The fat which we separate to make butter and the lactose constitute the carbonaceous portion of milk regarded as food. The casein, which is the principal part of cheese, and a certain proportion of albumin which is present, form the nitrogenous, while the complex saline substances and water are the mineral constituents. These substances are arranged in a proportion which render milk a perfect and typical food for the young of various animals and is provided by nature for them. Milk in either its natural state or in the form of butter and cheese is an article of diet so useful, wholesome and palatable, that dairies are important branches of husbandry. For dairy purposes different countries have different animals, each determining the most suitable animal for their use.

The Laplander gets his milk from his reindeer. The roving Tartar from his mares. The Bedouin of the desert with great ingenuity from his ships of the desert, his camels, the milk producers of which also serve him as cows. In Europe and this country the milk of goats is thought to be of value for young

children. Goats are adapted to the conditions of rocky, mountainous countries where cows would be ill fitted to get about.

The milking of ewes was once a common practice in Great Britain, but has fallen into disuse. In this country with the exception of a few goats the cow is used for dairy purposes.

Cows of every breed from the shorthorn to the typical Texas longhorn—the common native variety—the whitefaced Hereford so popular in the west, the butter specialist, the Alderney; the many imported sorts—Dutch belted cows, Aberdeenshire, Holstein and so on through the various types—are used for dairy purposes. The yield and quality of milk obtained from a cow is much influenced by the food; but a larger field is generally had from a cow that is not aged. When food is given that is deficient in butter, sugar casein and phosphates, the cow will supply these elements from her own system; so that in order to maintain her condition it is necessary that her food contain an adequate supply of the requisites for good milk.

It is becoming better understood among all classes of consumers that one of the greatest menaces to the production of sanitary milk is latent or developed disease in cows. In our state we test for a single disease, out of a fairly large group to which cows are subject, and most of which are directly transmissible or communicable to man.

This is the problem which we are facing. With a high standard of health in addition to clean surroundings, it is evident that we have gone far on the road towards production of sanitary milk. The danger to which children are exposed by drinking raw milk from cows that are not healthy or kept in good condition can hardly be estimated. This danger is lessened by application of heat to milk, thus destroying its pathogenic bacteria. Outbreaks of diphtheria, scarlet and typhoid fever are often traced to the milk supply, and the fatal cholera infantum causing a heavy death rate in children is largely due to the presence of putrefactive germs—tyrotoxicon—in stale milk. There are two methods of subjecting milk to this process, pasteurization and sterilization. Milk that is pasteurized has been raised to a temperature of 150 deg. F. for twenty minutes, this being sufficient to destroy germs of tuberculosis and scarlet fever. Sterilized milk has been raised to 212 deg. F. and kept rather over for some time. This milk when hermetically sealed will keep for an indefinite time; and it may be readily seen that this milk

is better for feeding young children than raw milk about which there is the slightest question.

The drawback to applying heat to milk is that it is rendered less agreeable to taste for persons who have followed the researches of Professor Metchnikoff and learned to admire the taste of sour milk; for this milk will not sour satisfactorily, but becomes "flat, stale and unprofitable." Professor Metchnikoff, you will remember, found a great many centenarians among the Bavarian peasantry, which he accounted for by their habit of using a great deal of sour milk. He concluded that lactic ferments were destroyers of bacteria infesting the large intestines, hence promoters of longevity.

Pasteurization and sterilization while fully capable of destroying the germs of tuberculosis, typhoid and scarlet fever, do not destroy all malefic germs which may work quite as much harm, for stale milk manufactures its own poisons of the ptomaine type—tyrotoxicon—for instance showing that we have not as yet found any perfect means of sterilization. At best, all these processes are makeshifts; hence our only hope of producing sanitary milk must be in highly specialized conditions of inspectorship of its production. It is evident that we can make no effectual substitute for fresh milk, so it becomes incumbent to be practical we turn our efforts and energies in this direction. So we have the expedients of certified milk, standardization, inspectorship of dairies, etc., etc.

In this direction our path is beset with difficulties of co-operation of the producer with the inspector, the former slowly learning to look with friendliness at the latter.

During the past five years 28,859 samples of milk were examined by the Health Department of the District of Columbia with a showing of $23\frac{1}{2}$ per cent. below the standard. There were 1,305 prosecutions for the sale of adulterated milk in the courts, these robberies made up largely of the pennies of poor people, half starved children, amount in money value each year to more than the cost of the Health Department.

Matters there cannot be safely left to individual dealers; but there must be provided a system of supervision and certification coming out of an inspectorship by competent and qualified veterinarians who will not certify milk coming from unhealthy cows or unclean surroundings, but solely clean milk produced by healthy cows. A system of inspectorship that would include the dairy surroundings as well as the cows; that would provide pure

water for the cows to drink, clean cowhouses, healthy animals, would, undoubtedly be a very efficacious solution of the problem of sanitary milk. If the Inspector were coming to take cognizance of the surroundings, there would be an incentive to effort, an emulation to see who could get the highest ratings. In time it would be seen that the inspector was not an enemy but a friend to the dairy man, since incipient disease would be recognized and stamped out to the well-being of the herd. Sanitary conditions and regulations as to water, care of the milkhouses, raise so much higher the rate of health, that a return to the old conditions would be as vigorously negatived by the herd owner as the sanitary commissions. That certified milk should be milk produced at dairies subjected to periodic inspection and frequent analyses.

That it be shown that the cows producing such milk must be properly fed and watered and free of disease; housed in clean stables, properly ventilated, and be kept brushed and clean. Milk drawn under conditions to preclude infection, immediately strained, cooled and put in sterilized bottles and kept at a temperature not to exceed 50 deg. F.

The purity of the water to be determined by bacteriological and chemical examination. Certified milk should not be more than twelve hours old when delivered. I very much doubt if any expedient ever produces for us sanitary milk, short of an inspectorship to be provided.

VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION.

President S. C. Neff called the association to order promptly at 10 o'clock in the Assembly Hall, Murphey's Hotel, Richmond, Va., January 13, 1911. The roll call evinced the presence of Drs. Faville, Gilchrist, Willis, Bannister, J. G. Ferneyhough, Neff, Will, Chrisman, Fraser, Epps, Von Lloyd, Barclay, T. H. Wood, Bowers, Holmes, Adair, Sweeny, Fischer and Walters. After reading and adoption of the Minutes, the Board of Censors was called into executive session to pass upon applications for membership. The report from this committee recommended to membership Drs. G. J. O'Brien, Keswick, Va.; W. G. Black, Norfolk, Va.; R. M. Corey, Richmond, Va., and D. P. Devine, Washington, D. C., who were favorably received. These gentle-

men were elected to membership in the association by a unanimous vote.

PRESIDENT NEFF'S ADDRESS.

The constant aim of this organization should be to establish a professional and social caste for its members, so that the most beneficent relations may be developed between the profession and the public. It is important then, and absolutely necessary that we have the entire and united efforts of every member of the veterinary profession. One dissenting, or inefficient member of this organization may be sufficient to defeat the entire plan. One man failing to co-operate must not only later find that his own usefulness is hindered, but that the work of the profession is thereby seriously, if not entirely crippled. We have much at stake and more will surely arise presently, and in order to meet the varying and important conditions affecting our profession, we need the active and interested work of every member in the association. When the veterinary profession, as a whole, realizes that its successful establishment depends upon the success of every member of that profession, then and not until then, can we hope to obtain the first requirements for success, complete and perfect organization. This is not only true of the profession as a whole, but equally true of the individual veterinarian, whose success often depends on the success of an associated, or neighboring, practitioner, one to assist in the development of that caste that is so essential to a successful dealing with the public. A weak, inefficient member of the profession is a distinct detriment, inasmuch as we are more often judged by our failures than by our successes. The states are awakening to the importance of the veterinary profession and when the time comes for us to exercise the trust that surely must be imposed upon us, let the profession be found entirely competent.

Now a few words in regard to the criticism of our competitor and the laity. A fair amount of criticism is due and expected and should prove beneficial. However, a proper understanding of the circumstances is absolutely essential and a true regard for the truth is imperative. It is human nature to interest ourselves in the doings of our neighbor, to a certain extent. To talk of the petty affairs, personalities, trifling misunderstandings, often generated by meddling tongues, are at best very unimproving and serve to kindle the spirit of intolerance, one of the oldest and one of the most baneful habits of the human mind.

When thus criticized, pick up the stones hurled at you and build for yourself monuments.

The first other address was that of Dr. W. B. Niles, of Ames, Ia., who has charge of the United States Experimental Work of the production of Hog Cholera Serum upon a farm located near Ames. Dr. Niles rehearsed a good portion of the work at Ames, giving the mode of preparation of serum and the work that has been done by the Government in manufacturing and working out the efficiency of Hog Cholera Serum. This was a most excellent address. He held the attention of the entire audience for over an hour. A general discussion was entered into immediately after Dr. Niles interesting address. It is needless to say that all the members present propounded many questions to Dr. Niles and received very satisfactory answers. Dr. Niles was with us to fill the place on the program made vacant by the absence of Dr. Melvin who asked the privilege of sending a representative if he found it impossible to be present.

The next feature of the program was the address of Dr. Roy K. Flannigan, State Health Inspector, on the subject of "Some Points of Contact Between the Veterinarian and the Public Health." This was a very strong and able address and Dr. Flannigan acquitted himself with honor. In fact, so well pleased were the members of the Association that they elected him to honorary membership before we even adjourned for lunch.

Dr. J. G. Ferneyhough gave a splendid address on the subject of "The Official Relation of a State Veterinarian to the Practitioner of Veterinary Science." Dr. Ferneyhough, in his usually agreeable manner, defined very clearly the relation which should exist between such parties. I think everyone agreed that Dr. Ferneyhough handled his subject ably.

It was a source of great disappointment to the members of the association not to have with us Dr. E. P. Wood and Hon. W. D. Saunders, both of whom had places on the program but were forced to be absent on account of illness.

After the completion of the literary portion of the program we entered upon new business for a few minutes. Dr. Chrisman introduced a resolution placing members of the association who had been active and faithful for twenty years on the honorary roll, which carries with it the non-payment of dues. After some discussion it met with a second, and the resolution was

adopted. At present we have members who have been active and faithful for seventeen years and if they continue three more years, it will certainly be an honor and pleasure to see these men pass to this roll which will indicate their faithful service of twenty long years. On motion of Dr. Faville, Dr. W. B. Niles was elected to honorary membership. On motion of Dr. Chrisman, who spoke of the esteem in which the association holds Dr. E. P. Niles, a former officer and one of the pioneers in the organization of this association, he was placed on the honorary roll.

The election of officers was the next item of business which resulted as follows:

President, Dr. J. G. Ferneyhough.

First Vice-President, Dr. H. Bannister.

Second Vice-President, Dr. Chas. Epps.

Secretary and Treasurer, Dr. W. G. Chrisman.

The newly elected president then appointed the Board of Censors which is composed of Drs. Willis, T. H. Wood, J. H. Sweeney, Adair and Holmes. The date and place for the next meeting was decided to be the Lynhaven Hotel, Norfolk, Va., the second Friday in July.

The Association then adjourned to meet in the dining room where Colonel Murphey had prepared for us a splendid dinner.

W. G. CHRISMAN, *Secretary-Treasurer,*
Raleigh, N. C.

COLORADO VETERINARY MEDICAL ASSOCIATION.

The annual meeting of this association was held in the Gentlemen's Riding and Driving Club rooms, Denver, Colorado, January 20, 1911.

The members in the forenoon visited a pathological exhibit given at the packing houses for the Meat Inspection Class of the Division of Veterinary Science, State College.

The meeting was called to order by the President, Robert H. Bird.

The secretary read a letter from Dr. M. H. Reynolds, secretary of the International Commission on the Control of Tuberculosis, offering copies of the reports on payment of the express charges. This offer was accepted by a motion.

The following new members were then admitted: Drs. W. W. Stewart, E. H. Aicher, F. D. Hylton, A. G. Wadleigh, G. McClain, J. C. Pace, C. Schaefer, W. S. Craig, G. C. Shaw, N. J. Miller, and E. A. Myers.

The matter of prosecuting offenders of the veterinary practice act was up and discussed. By a motion the prosecuting committee was ordered to proceed at once with prosecutions.

The subject of needed sanitary laws for the State of Colorado was up and discussed. Dr. E. J. Foreman read the Illinois law on the control and eradication of contagious diseases and urged the association to draft a bill and present it at the present legislature. It was moved by Dr. I. E. Newsom that it is the sense of the association that the legislative committee draft a bill along the lines suggested by Dr. Foreman and present it to the Live Stock Inspection Board and the several Live Stock Associations for their approval and support. Carried.

Dr. W. W. Yard, secretary of the State Examining Board, read a report and also an opinion of Attorney General Barnett on the authority of the Examining Board to prosecutions of violators of the law. Moved, seconded and carried that the members of the Examining Board and Legislative Committee be instructed to see what legal authority they deem necessary and to propose whatever amendments to the present law thought advisable, to the present legislature.

A resolution was passed asking the legislature to allow the appropriation asked for by the Veterinary Section of the Experiment Station for the purpose of conducting investigations in contagious diseases of animals in the State of Colorado.

The following resolution was then passed:

WHEREAS, Many of the diseases of the domestic animals are known to be transmissible to human beings, and,

Whereas, The transmission of these diseases may be through the medium of foods as meat and milk, etc., is well recognized, and,

Whereas, The State Board of Health has not a representative that is competent of the recognition of the presence of these diseases in the lower animals, therefore, be it

RESOLVED, That we, the Colorado Veterinary Medical Association, in session, recommend to the Hon. John Shafroth, Governor, that he appoint a licensed graduate veterinarian on the State Board of Health.

The following proposal for an amendment to the constitution and by-laws was read:

ART. III. Shall be changed to read that the officers of this association shall be a President, First and Second Vice-Presidents, Secretary-Treasurer and an Executive Committee, all of whom shall be elected by ballot at each semi-annual meeting, they to assume their duties following the next annual meeting.

CHAS. G. LAMB,
GEO. H. GLOVER,
B. F. KAUPP.

Dr. Geo. H. Glover extended an invitation to the association to hold its next meeting at the State College. This invitation was accepted by motion. It was decided that the June meeting should be a two-days' meeting.

The following officers were elected for the coming year:

Dr. Geo. W. Dickey, President.

Dr. E. J. Foreman, First Vice-President.

Dr. M. J. Woodliffe, Second Vice-President.

Dr. B. F. Kaupp, Secretary-Treasurer.

Executive Committee—Drs. A. B. McCapes, E. J. Foreman and I. E. Newsom.

The annual banquet was held at the Auditorium Hotel.

M. J. WOODLIFFE, Secretary.

WEST VIRGINIA VETERINARY MEDICAL ASSOCIATION.

Annual meeting of the above association was held at Clarksburg, W. Va., on January 16th and 17th, 1911. Meeting called to order by the president, Dr. J. C. Callander, of Parkersburg, with Dr. Layne acting as secretary in place of Dr. Kavercombe, who had moved from the state. About twenty members were in attendance and several interesting sessions were held. The most important business transacted was the framing of a bill regulating the practice of the profession, to be presented to the legislature now in session at Charleston. Wheeling was selected as the place of next meeting in September, week of West Virginia State Fair.

L. N. REEFER, Secretary.

NEWS AND ITEMS.

DR. RAY J. STANCLIFT, of Fort Robinson, Nebraska, has gone with the Eighth Cavalry to Manila, P. I.

DR. ALFRED LEWIS MASON, Veterinarian 13th Cavalry, U. S. A., has been transferred from Batanjas, P. I., to Fort Riley, Kansas.

DR. A. R. WARD (Cornell, 1901), Chief Veterinarian in the Philippine Service, has recently been made Dean of the Manila Veterinary College.

DR. CHARLES M. MORGAN, who returned to Columbia, S. C., from the Philippines last May, is in charge of the Animal Husbandry work at the latter place with Dr. Knapp.

DR. WM. T. CUTHBERTSON, graduate of the class of 1910, Division of Veterinary Science, Colorado Agricultural College, died at his home in Fort Collins, Colo., January 18, 1911.

W. J. FRAZIER, founder of the firm of W. S. Frazier & Sons, makers of the Frazier sulky, known to horse owners everywhere, died recently at Aurora, Ill., at the good old age of 101 years.

ONE hundred horses of the draft and general delivery types were sold at the Fiss, Doerr & Carroll Co.'s place on East Twenty-fourth street, New York, on Washington's birthday; not a bad showing for a holiday. The passing of the horse *not yet!*

DR. C. J. MARSHALL, Philadelphia, has been appointed State Veterinarian of Pennsylvania to succeed Dr. S. H. Gilliland, who has resigned on account of ill health and other duties. Dr. Marshall will still hold the chair of Veterinary Medicine at the veterinary school.

DR. G. S. HOPKINS, professor of anatomy in the New York State Veterinary College, has gone to Europe to study the methods of teaching anatomy in the best European schools. The doctor will devote six months to his object, spending a few months at Dresden.

DR. W. W. RICHARDS, of Manila, P. I., in renewing his subscription says: "I would feel as if I had lost a long-time friend without the monthly arrival of this valuable compilation of veterinary facts, and of the good work being done by the profession in the home land."

DR. VICTOR GAGE KIMBALL, graduate of New York State Veterinary College, class of 1908, has been appointed Assistant Professor of Theory and Practice of Veterinary Medicine at the University of Pennsylvania Veterinary School. Dr. K. F. Meyer, the recently appointed pathologist of the school, has been selected as Director of the Laboratory of the State Live Stock Sanitary Board.

CIRCULAR 168, U. S. Dept. Agriculture, Bureau of Animal Industry, issued February 16, 1911, entitled "A Note on the Feeding Value of Coconut and Peanut Meals for Horses," is very interesting, and indicates that at the prices paid for feed at the time, coconut and peanut meal, in the proportion of two pounds to one, can replace oats in the ration of young horses, and may be found advantageous for work horses after they have become accustomed to it.

ON Wednesday evening, February 15th, hundreds of sportsmen from New York, Boston, Philadelphia, Cleveland, Baltimore, the South, Montreal and Toronto, gathered at the Turf and Field Club, New York, to do honor to the horse. This was the first annual sportsman's dinner, and was organized by Mr. Harry W. Smith, Master of the Grafton Hunt, Grafton, Mass. Mr. August Belmont in an address at this dinner, emphasized the importance of the thoroughbred for economic, military and sporting uses, and before closing his address, stated that he would present the United States army with six good stallions, which he named, and that he would offer eight free services to his stallions in Lexington, Ky., to such mares belonging to the army as the chief of staff may see fit to issue a written order for.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list :

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alumni Ass'n, N. Y.-A. V. C.	April 26, 1911...	141 W. 54th St.	J. F. Carey, East Orange, N. J.
American V. M. Ass'n.....	Aug. 22-25, 1911.	Toronto, Can.	C. J. Marshall, Philadelphia.
Arkansas Veterinary Ass'n.....		Lec. Room, La-	Horace E. Rice, Little Rock.
Ass'n Médécale Veterinare Fran-	1st and 3d Thur.	val Un'y, Mon.	J. P. A. Houde, Montreal.
çaise "Laval"	of each month	Chicago.....	H. A. Smith, Chicago, Ill.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	S. Omaha, Neb.	E. J. Jackson, So. Omaha.
B. A. I. Vet. In. A., So. Omaha	3d Mon. ea. mo...	San Francisco.	J. J. Hogarty, Oakland.
California State V. M. Ass'n.....		Ottawa	A. E. James, Ottawa.
Central Canada V. Ass'n.....		Syracuse	W. B. Switzer, Oswego.
Central N. Y. Vet. Med. Ass'n.....	June and Nov...	Chicago	D. M. Campbell Chicago.
Chicago Veterinary Society.....	2d Tues. ea. mo	Ft. Collins.....	B. F. Kaupp, Ft. Collins.
Colorado State V. M. Ass'n.....	June, 1911.	Hartford..	B. K. Dow, Willimantic.
Connecticut V. M. Ass'n.....	1st Tues. Feb. '11		J. H. Taylor, Henrietta.
Genesee Valley V. M. Ass'n.....			P. F. Bahnsen, Americus.
Georgia State V. M. A.			Louis P. Cook, Cincinnati.
Hamilton Co. (Ohio) V. A.			J. H. Crawford, Harvard.
Illinois State V. M. Ass'n.....			E. M. Bronson, Indianapolis.
Indiana Veterinary Association.....			H. C. Simpson, Denison.
Iowa Veterinary Ass'n.....			B. Rogers, Manhattan.
Kansas State V. M. Ass'n.....			D. A. Piatt, Lexington.
Kentucky V. M. Ass'n.....			E. H. Yunker, Phila.
Keystone V. M. Ass'n.....			E. P. Flower, Baton Rouge.
Louisiana State V. M. Ass'n.....			C. W. Watson, Brunswick.
Maine Vet. Med. Ass'n			H. H. Counselman, Sec'y.
Maryland State Vet. Society.....			J. H. Seale, Salem.
Massachusetts Vet. Ass'n.....			Judson Black, Richmond.
Michigan State V. M. Ass'n.....			G. Ed. Leech, Winona.
Minnesota State V. M. Ass'n.....			J. C. Robert, Agricultural Col.
Mississippi State V. M. Ass'n.....			Hal. C. Simpson, Denison, Ia.
Missouri Valley V. Ass'n.....			D. L. Luckey,
Missouri Vet. Med. Ass'n.....			W. S. Swank, Miles City.
Montana State V. M. A.			H. Jensen, Weeping Water.
Nebraska V. M. Ass'n.....			H. J. Milks, Ithaca, N. Y.
New York S. V. M. Soc'y.....			W. G. Chrisman, Raleigh.
North Carolina V. M. Ass'n.....			C. H. Babcock, New Rockford.
North Dakota V. M. Ass'n.....			A. J. Kline, Wauseon.
North-Western Ohio V. M. A.			O. V. Brumley, Columbus.
Ohio State V. M. Ass'n.....			F. F. Sheets, Van Wert, Ohio.
Ohio Soc. of Comparative Med.			M. P. Hunt, Endi.
Oklahoma V. M. Ass'n.....			C. H. Sweetapple, Toronto.
Ontario Vet. Ass'n.....			H. K. Berry, Paterson, N. J.
Passaic Co. V. M. Ass'n.....	Call of Chair.	Paterson, N. J.	F. H. Schneider, Phila.
Pennsylvania State V. M. A.	Mar. 7, 1911...	Philadelphia.	Chas. G. Thomson, Manila.
Philippine V. M. A.			Peter Hanson, Portland, Ore.
Portland Vet. Med. Ass'n.....	4th Tues. ea. mo.	Portland, Ore.	Gustave Boyer, Rigaud, P. Q.
Province of Quebec V. M. A.		Mon. and Que.	J. S. Pollard, Providence
Rhode Island V. M. Ass'n.....		Providence	F. Hockman, Louisville.
So. Illinois V. M. and Surg. A.		Centralia.....	
St. Louis Soc. of Vet. Inspectors.			
Schuylkill Valley V. M. A.		St. Louis.....	Wm. T. Conway, St. Louis, Mo.
Soc. Vet. Alumni Univ. Penn.			W. G. Huyett, Wernersville.
South Dakota V. M. A.		Philadelphia.	B. T. Woodward, Wash'n, D. C.
Southern Auxiliary of California		Watertown...	S. W. Allen, Watertown.
State V. M. Ass'n.....			
So. St. Joseph Ass'n of Vet. Insp.		Los Angeles.	A. D. Hubbell, Los Angeles.
Tennessee Vet. Med. Ass'n.....		407 Ill. Ave...	H. R. Collins, So. St. Joseph
Texas V. M. Ass'n.....			A. C. Topmiller, Murfreesboro
Twin City V. M. Ass'n.....			R. P. Marsteller, College Sta.
Vermont Vet. Med. Ass'n			S. H. Ward, St. Paul, Minn.
Veterinary Ass'n of Alberta.			G. T. Stevenson, Burlington.
Vet. Ass'n Dist. of Columbia.....			C. H. H. Sweetapple, For.
Vet. Ass'n of Manitoba.....			Saskatchewan, Alta., Can.
Vet. Med. Ass'n of N. J.			
V. M. Ass'n, New York City.....		514-oth St.,	M. Page Smith, Wash., D. C.
Veterinary Practitioners' Club.....		N. W.	F. Torrance, Winnipeg.
Virginia State V. M. Ass'n		Winnipeg.....	W. Herbert Lowe, Paterson.
Washington State Col. V. M. A.		N. W. Brunswick.	R. S. MacKellar, N. Y. City.
Washington State V. M. A.		141 W. 54th St.	A. F. Mount, Jersey City.
Western Penn. V. M. Ass'n.....		Jersey City	W. G. Chrisman, Raleigh.
Wisconsin Soc. Vet. Grad.		Norfolk.....	R. J. Donohue, Pullman.
York Co. (Pa.) V. M. A.		Seattle.....	I. T. Seely, Seattle.
		Pittsburgh.....	F. Weitzell, Allegheny.
		Green Bay.....	J. P. West, Madison.
			E. S. Bausticker, York, Pa.

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A WORD ABOUT BACTERIAL VACCINES is the interesting heading of an advertisement that appears on page 24 (adv. dept.) of this issue. You may learn as much more about them as you desire, by writing to the Accuracy Laboratories, mentioning the REVIEW.

IROSOL-VAGINALLS, HEMOSTATIC FORCEPS AND TUBERCULIN are only a few suggestions; ERNST BISCHOFF & Co. can furnish you with some interesting facts about their importations if you will write requesting them. Get the address on page 1 (adv. dept.) of this issue. Mention the REVIEW when you write.

This is the season when many conditions arise calling for a good anti-septic. CHLORO-NAPHTHOLEUM will be found to be good, and, at the same time, an economical one. Write the WEST DISINFECTING Co. for particulars, mentioning the REVIEW. You will find their address on the lower half of the inside back cover page.

This month closes out the winter season, and finds many horses run down from the trying conditions of roads, etc., incident upon the winter weather. A timely assistance in the form of a stomach tonic is indicated. Such a tonic may be found in the RED BALL BRAND STOCK Food prepared by the ATKINS AND DURBROW Co., whose address you will find on page 26 (adv. dept.). In writing them, mention the REVIEW.

